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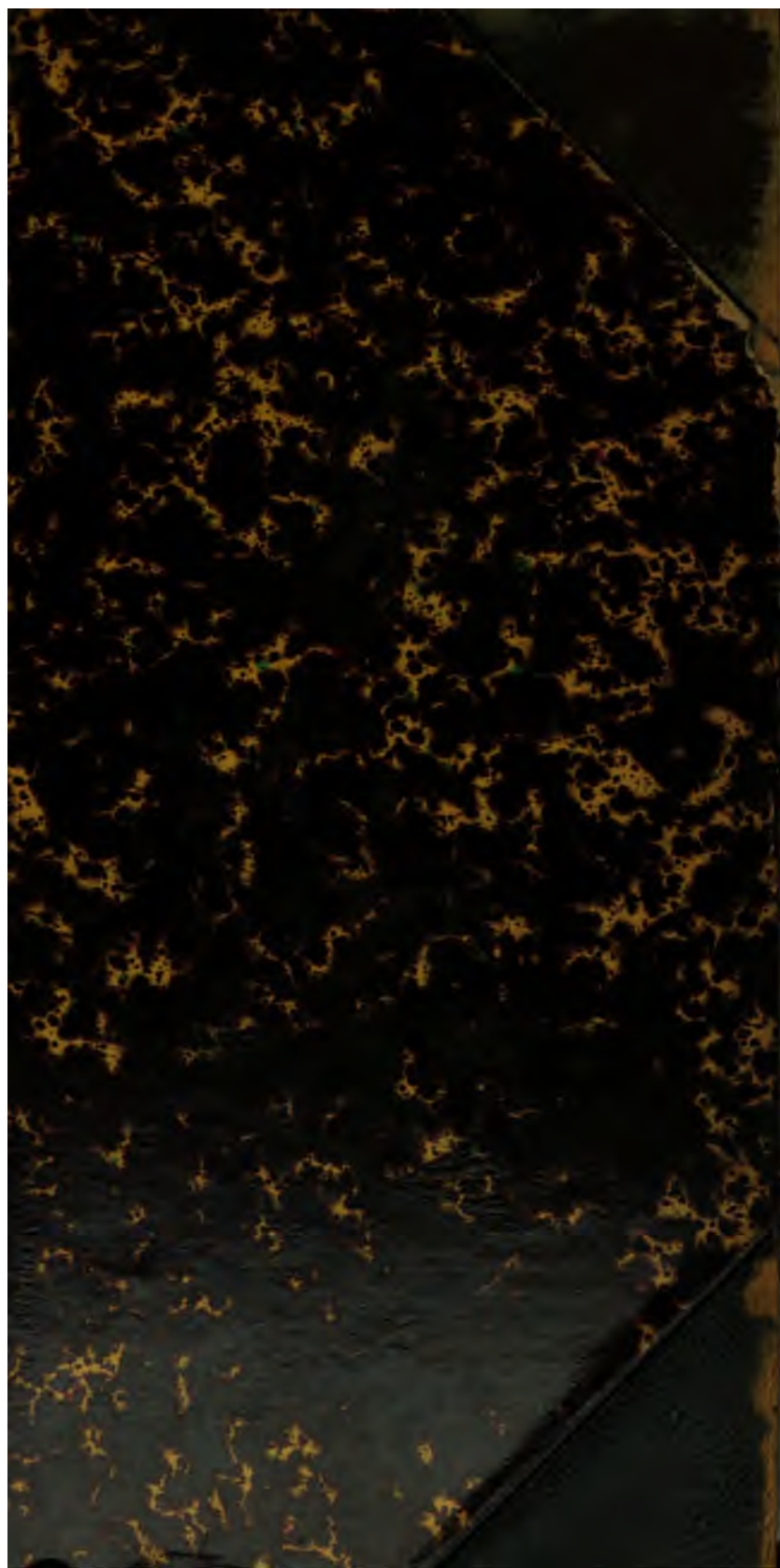
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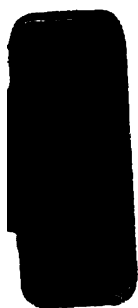
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THE  
DUBLIN JOURNAL  
OF  
MEDICAL SCIENCE.

EDITED BY  
SIR JOHN WM. MOORE, B.A., M.D., M.CH., UNIV. DUBL.;  
EX-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND;  
SENIOR PHYSICIAN TO THE MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY;  
CONSULTING PHYSICIAN TO CORK-STREET FEVER HOSPITAL;  
EX-SCHOLAR OF TRINITY COLLEGE, DUBLIN;  
FELLOW OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON.

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# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. I.—*A Case of Disseminated or Insular Sclerosis in a Girl aged twenty-two years.*<sup>a</sup> By J. MAGEE FINNY, M.D.,  
Dubl.; Past President, R.C.P.I.; Physician to Sir P.  
Dun's Hospital.

Two years ago Dr. James Craig brought under the notice of the Academy a man, aged thirty-four, with well-marked evidences of disseminated cerebro-spinal sclerosis. The case is recorded in Vol. XVIII. of the "Transactions."

The case I submit on this occasion is another of the same disease in a young woman—M. D.—aged twenty-two, who was admitted under my care in Sir Patrick Dun's Hospital in November, 1901, for paraplegia and tremors.

Her illness dates from August, 1897—over four years ago—and for fifteen months she was a patient in the County Infirmary, Roscommon, under Dr. Blakeney.

The onset of her illness was not the usual commencement of disseminated sclerosis, and adds another peculiarity to the many which are associated with it, in its inception and its course, and which, from their want of agreement with those of focal diseases, have only too often led to errors of diagnosis and prognosis.

<sup>a</sup> Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, December 13, 1901, at which the patient was exhibited.

The peculiarity to which I refer was the rapid manner in which this girl of eighteen years of age became ill without any known cause or previous sickness. Within a month (as Dr. Blakeney kindly informed me) she was completely paralysed, as to motion, in both arms and legs. She was unable to stand or walk or move in bed. She lost control over the bladder and rectum, and bedsores (of which she has the scars) formed over the sacrum and nates. She was in this state of paralysis of arms and legs for four months, when the power gradually returned, and after a period of fifteen months she was discharged, at her father's request, on May 29, 1899, in very much the condition we find her in now.

[The patient was here introduced and exhibited.]

Analysing the symptoms in the order of their prominence one notices—

I. The *paraplegia* to be of a complex character. The paralysis of the muscles of locomotion is incomplete, for she is able to stand a little, to fairly maintain her balance with the eyes closed, and to walk some steps with very little assistance. At the same time the gait is of the "spastic" type, and the feet are inclined to catch and to be adducted in progression. On handling the legs there is no resistance to flexion or extension such as is met with in spastic paraplegia, primary or secondary. The *tendon reflexes* are extremely exaggerated at the knee and ankle in either leg—the right in particular—and the myotatic irritability of the quadriceps extensor cruris is readily elicited by drawing down the patella: and thus, at the same time, both reflexes, ankle clonus and knee jerk, can be demonstrated. The dorsal extensor reflex of the toes (Babinski's sign) is well marked in the right foot on stimulating the plantar surface. Sensation—tactile, thermal and algesic—is unimpaired. The partial loss of power is also demonstrable in the arms and hands, and the wrist and elbow *reflexes* are much exaggerated. The bladder and rectum are slightly affected, in so far as delay in micturition, and the involuntary relaxation of the sphincter ani should any strong aperient be taken. When first ill—

four years ago—these symptoms were much more pronounced.

2. *Tremors*.—Coarse and irregular tremors are present in the head and upper extremities, when the smallest effort is made—hence “volitional” or “intentional” tremors—such as on lifting the head from the pillow, or putting out the tongue. On clapping the hands together or directing the finger to touch the observer’s finger, or attempting to drink a glass of water, coarse, semichoreic, agitation of the arms and shoulders sets in, and, if the patient be nervous from any excitement, the attempts are often futile. When the patient is at rest in bed or in an easy chair all tremor ceases.

3. *Speech*.—The mode of speech is characteristic, being deliberate, slow, and pronouncing each syllable, and hence is called “scanning,” “staccato,” or “syllabic.” Sometimes there is a slight slurring of some words. There is complete absence of the minute fibrillary tremors of the tongue and lips met with in general paralysis, or in glosso-labio-pharyngeal paralysis. The tongue does not deviate to either side on being protruded, and there is no difficulty in mastication or deglutition.

4. *The Ocular Symptoms*.—Nystagmus is present when the eyes are rapidly turned outwards and upwards, as well as occasional gross jerking of the eyes when directed to an object. The patient’s only complaint as regards her eyes is that on reading to the end of a line she loses her place, as she cannot find the next line, and owing to the jerking of her hands she cannot correct the aberrant sight by placing her finger on the next line.

Mr. H. Swanzy, F.R.C.S.I., most kindly examined her eyes for me on November 25th at the Victoria Eye and Ear Hospital, and sent me the following report:—

“Nystagmus.—R. E., V. =  $\frac{6}{14}$ ; L. E., V. =  $\frac{6}{14}$ . Field of vision in each eye very much contracted, but this is probably a functional (neurasthenic or hysterical) symptom. *Ophthalmoscope*—Outer two-thirds of each optic disc pale, pointing to a partial atrophy.”

It will be noted there is no retinitis, optic neuritis, or swelling of the disc.



5. The last feature I would call attention to is the unduly *complaisant cheerfulness* and happy contentment of the patient in her sad lot. There is no other evidence of mental weakness. She never complains or worries about her helpless state, and answers all queries calmly and readily. This may be largely due to a natural gentleness and amiability, but Dr. Gowers lays stress on these mental features as the most frequent and characteristic of disseminated sclerosis, and considers a morbid complacency to be more frequently present in women than in men.

Of the organic nervous diseases, which more or less closely simulate disseminated sclerosis in one or more of its typical characteristics, it is sufficient to simply enumerate the following:—Paralysis agitans, general paralysis, mercurial tremors, syphilitic disease of irregular distribution, ataxic paraplegia, intracranial tremors, particularly of the cerebellum, and transverse myelitis.

It is not my intention, nor is this the occasion, to enter into the question of diagnosis, although it be most interesting, and of the highest practical importance. I shall only say that in a case, like this girl's, a diagnosis is unmistakable, as all the typical signs of disseminated sclerosis are present:—(a) Nystagmus; (b) optic atrophy; without neuritis and with a disproportionate defect of the field of vision; (c) syllabic speech; (d) intentional tremors of a coarse nature; (e) exaggerated reflexes of the elbows and wrists, as well as of the knee and ankle, and the dorsal extensor reflex of the foot; (f) spastic paraplegia; (g) vesical paresis.

But, where many of the typical signs are absent, or where they have changed in character and intensity, or have quite disappeared, the suspicion of *hysteria* is sure to arise, and especially so, when the patient is a young woman, whose manner and personal appearance suggest an emotional temperament. Under such circumstances too much care cannot be taken before pronouncing an opinion, and the element of time and its developments should never be omitted in making a diagnosis.

ART. II.—*Hemichorea and Parotitis, complicating a Case of Diabetes.*<sup>a</sup> By GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physician, Adelaide Hospital, Dublin.

ON the 29th of April, 1901, a man, aged sixty-four years, was admitted to the Adelaide Hospital under my care. He stated that his present illness began about two months previously with loss of appetite, great thirst, and increased flow of urine. He had also lost about five stone in weight during this period. Diabetes was suspected as the cause of his trouble, and an examination of the urine confirmed the diagnosis.

Quantitative analysis of the urine by Fehling's Solution showed on the 2nd of May 2·7 oz. of sugar per diem—the amount of urine passed being 89 oz. A subsequent analysis gave 0·9 oz. of sugar per diem, the amount of urine passed being 100 oz.

From the outset he seemed an unfavourable case. Drowsiness, at times almost approaching coma, was a marked symptom throughout his illness, and he died on the 28th of May, just four weeks after admission to hospital.

On the 4th of May it was noticed that his left arm and leg were in almost constant movement. These movements were choreiform in character, irregular and purposeless. Their severity altered at different times—emotion always made them worse. So severe did they become that it was practically impossible without constant watching to keep the clothes on his bed, and an acute eczema of the legs resulted, mainly, I think, from the constant friction of one limb against the other. By a strong effort of will he was able to control these movements for a few minutes, but they soon returned again. They ceased during sleep. I first tried chloral, bromide of potassium, and tincture of hyocyanus without any effect, then hypodermics of hyoscin with a similar result.

On the 8th of May I gave 10 minim doses of liq. arsenicalis every eighth hour, and that night he had 20 grs. of

<sup>a</sup> Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, December 13, 1901.

trional, partly to procure sleep, but also in the hope that it would have a directly beneficial effect on the chorea.

The following day there was a decided improvement in his condition. The arsenic was continued, and he was given trional every night. The movements ceased entirely on the 13th of May. Whether this result was due to the arsenic or to the trional is open to question. The value of arsenic in the treatment of chorea is well known. Trional has as yet been seldom employed.

In the *British Medical Journal* of November 2nd, 1901, Dr. Meade records a case of acute chorea in a lady, aged twenty-five, who was six months pregnant. Her symptoms, which were severe, had resisted treatment by arsenic and bromides, when trional was given, 25 grs. at night and 15 grs. the following morning. Improvement rapidly followed, and by June 1st, or ten days after the first administration of the drug, her condition was so much better that only 12 grs. were given at bedtime, and this dose was discontinued a week later.

Last January a girl, aged eleven years, was admitted to the Adelaide Hospital under the care of one of my colleagues. She was suffering from acute chorea, and the ordinary sedative drugs were tried without success.

I advised the use of trional in 3 gr. doses every fourth hour. Improvement rapidly followed, and the drug was discontinued a fortnight later, all the choreic symptoms having subsided.

In the *Medical Annual* for 1900 Dr. Adams has a short note on the use of sulphonal and trional in chorea. He considers the latter drug to be preferable, and is also of opinion that it is more useful than the drugs of a sedative nature that are usually employed. I have as yet had few opportunities of testing the value of trional in the treatment of chorea. My experience so far will, however, lead me to give it a further trial when a suitable case comes under my care.

The occurrence of chorea in a man over sixty is a rare event. The types of chorea known as Huntington's Chorea and Senile Chorea, which occur in patients past middle life, are characterised chiefly by their chronicity.

The former is incurable and shows a strong hereditary tendency; recovery from the latter occasionally occurs after months or years—treatment having apparently little or no effect on the result.

The present case is evidently not an example of either of these forms. Can we regard it as pathologically related to Sydenham's Chorea? Little that is certain is at present known of the pathology of this affection. The embolic theory so long held, especially by English writers, is now rightly discarded, as there is no evidence pathologically to support it.

Many consider that it is merely a functional brain disorder, an instability of the nerve cells, and instance in proof of this, those cases which occur as the immediate result of some sudden fright or emotion. Whilst others account for the symptoms by the action of some toxic agent, the result either of an altered blood state or of some infective organism introduced into the system from without.

In favour of this view it has been urged that both rheumatism and endocarditis, which so commonly occur in association with chorea, have their origin in a common cause—some infectious agent—that cases are frequently met with in the course of the infectious fevers, notably scarlet fever according to Ross, in puerperal fever, and also after gonorrhœa; while Denne records a remarkable case which appeared after the use of iodoform in a fistula connected with caries of the cervical vertebræ, the symptoms of which ceased when the iodoform was suspended and returned on resumption of the treatment.

The poisons which circulate in the blood in diabetes can produce a profound effect upon the nervous system—the occurrence of coma, of peripheral neuritis, of toxic amaurosis are sufficiently striking examples. May they not, also, in other cases so act on the nerve cells controlling the motor apparatus as to cause symptoms such as occurred in the present case—symptoms that were at any rate clinically identical with those of chorea?

The second complication which occurred in the present case was parotitis.

On the 11th of May I first noticed a swelling over the parotid region on the right side. At first this seemed to give little trouble, but as it increased in size it became tender and gave rise to considerable pain. It was not until the 16th that there was any elevation of temperature, and then only a very slight one. During the last few days of the patient's life the temperature varied between 100° and 101·6°—the latter being the highest recorded.

When it appeared to me that a suppurative process was going on in the gland I asked Mr. Gordon to see the case with me, but owing to the patient's general condition, and also to the fact that no part was specially presenting, no surgical interference was attempted.

I can find no mention of a similar condition occurring in the course of diabetes, nor can I offer any explanation of its cause in the present case.

Apart from specific parotitis or mumps, inflammation of the parotid gland has been observed in the course of the infectious fevers, typhus, enteric, pneumonia, pyæmia, &c., and in connection with injury or disease of the abdomen or pelvis. Of 101 cases collected by Stephen Paget, and mentioned by Osler, 10 followed injury or disease of the urinary tract, 18 were due to injury or disease of the alimentary canal, and 23 were due to injury or disease of the abdominal wall, the peritoneum, or the pelvic cellular tissue. One gland only is usually attacked, and in 78 cases in which the termination is recorded 45 suppurated, and 33 resolved without suppuration.

That in many cases the origin is septic there can be little doubt, and when occurring in the course of pyæmia the condition is usually regarded as metastatic. In others it may possibly arise from irritants which proceed from the decomposition of matters retained in the mouth and gain access to the gland through Steno's duct, or as the result of dryness of the buccal mucous membrane leading to an obstructed state of Steno's duct with decomposition of the retained salivary secretion. "For such an opinion," says Hilton Fagge, "there seems to be no sufficient foundation."

Whether the presence of diabetes had any direct in-

fluence in the production of parotitis in the present case I must leave to others more competent to form an opinion than I am. Its relation to the choreic symptoms, though obscure, seems, perhaps, more intelligible. The occurrence of two unrecorded complications in the course of the disease is at any rate a matter of some curiosity, if not of considerable interest.

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ART. III.—*An Apology for Bacteria*.<sup>\*</sup> By RICHARD TRAVERS SMITH, M.D., Univ. Dubl.; F.R.C.P.I.; Assistant Physician to the Richmond, Whitworth and Hardwicke Hospitals, Dublin.

THE title of this paper—"An Apology for Bacteria"—may probably be a source of surprise to some who perchance share the popular belief that bacteria (using the word as synonymous with microbes or micro-organisms) are one and all harmful to mankind and indefensible. To the lay mind all microbes and Man are natural and deadly enemies, ever at daggers drawn—a contest implying certain victory for the microbes. The truth is that bacteriologists, with broadmindedness begotten of extensive cultivation, are wont to vary their colouring of bacteria, whilst the general public, on the other hand, stain them all with a single dye, and that the blackest of the black. In this respect bacteria, like Man himself, are victims to the general law that evil report ever outstrips good. The scientific subject which is now-a-days most energetically dinned into public ears is the microbic origin of disease. The majority of people, therefore, shrink with abhorrence from the very thought of bacteria, and would hail with undisguised joy any scheme to promote their total extermination—truly an inestimable disaster!! A homely classification may be made of bacteria into good servants and bad masters. The bad masters are the pathogenic organisms whose action it is our special duty to study in medical science. The good servants, much the more numerous and important from a biological standpoint, are

<sup>\*</sup> Being the Presidential Address delivered to the Dublin University Biological Association, November 14, 1901.

ceaselessly and strenuously toiling for the benefit of the human race. My endeavour will be to render an account of their stewardship by indicating (in necessarily a sketchy and unfinished fashion) the part which such beneficent microbes play in the economy of nature, in our industries and arts.

First, let us consider bacteria in the rôle of scavengers. The attempt is entertaining, if difficult, to give one's imagination sufficient play, to mentally depict the appearance this world would present if all animals and plants, when their allotted span of life had expired, had permanently remained as they had died. To this imaginary picture of the earth let there be added the accumulated and unaltered excretions of the living animal and vegetable kingdoms since they commenced to exist, then will your mind's eye be greeted by a hideous nightmare unparalleled for horror in Dante's "*Inferno*." The dead and waste of both sea and land would, by their very bulk, have crowded out the living. Even the most superficial observation happily shows us, however, that all dead animals and plants, as also the waste products of living ones, sooner or later disappear from our ken as such. The processes called variously putrefaction, decomposition, fermentation, and decay, whereby the earth is cleansed of its dead—prodigious task though it be—is carried out in the main by bacteria. That bacteria are the scavengers of this earth's dead organic matter admits of simple proof, for, exclude them from such matter, and it will not decompose. This is done every day in preserving meat by hermetically sealing it in tins. Or if dead organic matter happens to be in a situation uncongenial to microbes it escapes decomposition. As examples of this may be mentioned that the vaults of certain churchyards, for some obscure reason or other, are not conducive to the prosperity of bacteria, so the bodies there entombed remain preserved. Again, as extreme cold is prejudicial to bacterial growth a frozen animal escapes indefinitely molecular destruction. It is recorded that the frozen Siberian mammoths, on being discovered, were in part devoured with relish by the hunters' dogs, so little altered were they; yet they must have lain for countless centuries embedded in the ice.

Next let us consider bacteria as the purveyors of suitable food to the vegetable kingdom. It is manifestly true that vegetable life cannot continue to exist indefinitely on a limited food supply. Plants extract the necessary food for their growth from an originally limited supply contained in air, soil, and water. Did not Nature provide a method by which the material so used is restored to whence it came in a form again available as food for plants—vegetable life would become extinct from starvation, bankrupt, in fact, as the result of perpetually drawing on its capital.

The extinction of the vegetable kingdom would eventually be followed by that of the animal, since the interdependence of plants and animals is absolute. This point is well illustrated by a consideration of their separate respiratory processes. Animals, on the one hand, absorb oxygen from the atmosphere and excrete carbon dioxide gas back to it, produced in their bodies by the oxidation of carbon. Green plants, on the other hand, absorb carbon dioxide gas, store up its carbon in their interior, and excrete its oxygen back to the atmosphere. In this respect it will be observed that green plants and animals utilise each other's excretion. Furthermore, the carbon which green plants store up becomes transformed into starch, sugar, &c., thereby becoming an available supply of carbon for animals instead of accumulating in the atmosphere in the form of carbon dioxide gas and asphyxiating them. Apart from this it is obvious that in the event of vegetable life becoming extinct all animals must of necessity become carnivorous, with the result that animal life would come to an untimely end, after much the same fashion, I imagine, as on the famous occasion when it was represented by certain members of the feline tribe, who, as the legend runs, were hung by their caudal appendages, out of reach of the vegetable world, in the thus famed town of Kilkenny.

These, gentlemen, are indisputable facts—that animals cannot exist without plants, or plants cannot exist unless their originally limited stock of food in air, soil, and water is continually renewed. The sources of renewal are three—



dead animals, dead plants, and the waste products of living animals and plants. The plant food itself consists of certain simple chemical compounds—water, carbon dioxide, and inorganic salts, such as sulphates, phosphates, and nitrates of potassium, calcium, magnesium and iron. The carbon dioxide supplies them with carbon, water with their hydrogen and some of their oxygen, nitrates or salts of nitric acid chiefly with their required nitrogen. The anabolic activity of plants builds these simple bodies into much more complex ones—namely, starch, sugar, fat, proteid or nitrogenous substances, all of which, together with certain inorganic salts and water, supply the animal kingdom with its essential pabulum. In the animal body some of these substances are elaborated into even more highly complex forms. So highly chemically complex does the simple food which plants require become when built up into plants and animals that it is rendered a totally unfitted diet for plants. In like manner the excretions of living animals and plants, with the exceptions of carbon dioxide, water, and certain inorganic salts, are molecularly too complex to be immediately available to plants as food. It will appear from what has been said so far that if dead animals and plants, and the excretions of living ones, are again to feed plants they must be reduced once more from complex to simple form. This transformation is at once essential, intricate, and practically ubiquitous, so must be accomplished by industrious, skilled analytical chemists, whose laboratory is the world at large. These chemists are bacteria—bacteria which, while scavenging and feeding upon the dead and upon the excretions of the living, decompose these otherwise injurious materials into suitable food for plants. Herein Nature has devised a wondrous and indispensable plan for economising her limited store, by making food traverse a circle, first leaving air, soil, and water and passing into plants, thence to animals, to be brought back once more from the dead and waste of the living to air, soil, and water by the might of bacterial activity. Indubitably, gentlemen, science has proved that without these much-maligned microbes none of us could be here at present, as without them the

circle round which food stuff must perpetually move would be broken, and the continuity of all life thus interrupted. The farmer who throws farm-yard manure on his land, knows empirically that it will increase his harvest; he never fathoms the depths of his indebtedness to bacterial action, without which the manure would remain as useless to a crop as its weight of stones.

Let us not, then, be content to call the trusty workers which we find in almost countless numbers in air, soil, and water by the slighting appellation of "harmless bacteria," for their virtues are not of this negative description. Each is there for a definite purpose if we only knew it. At times even we abuse them at their labour, as when they rot our meat or sour our milk, whereas all indulgence should be shown them, since they are endeavouring to feed plants in turn to feed us. Milk and meat, for the time being, are so much dead organic matter, idling and loitering on its way around Nature's food circuit; bacteria, like policemen, manifest a rooted dislike to loiterers, so officiously insist on their "moving on."

Unnecessary alarm is often manifested at the number of bacteria to be found in water. Here, again, it must be remembered that their number is in direct proportion to the amount of dead organic matter in the water. For this reason bacteria are most numerous in sewage and in all stagnant waters, from which they rapidly tend to disappear when they have removed the organic impurities.

It would be impossible in the time at our disposal to follow every element of food stuff throughout its circulation. If, however, nitrogen be traced it will best illustrate the essential and subtle part played by bacteria in Nature's food scheme. With a most important exception—to be afterwards mentioned—green plants get their nitrogen, not from the nitrogen which constitutes 79 per cent. of the atmosphere, but by absorbing from the soil certain salts of nitric acid, or the so-called mineral nitrates. These nitrates are widely distributed through the earth's soil, but do not exist in anything approaching accumulations except in very few places. Such a scant stock would soon become exhausted by vegetable growth were it not con-

stantly replenished from the stock of nitrogen in dead plants, dead animals, and the excretions of living ones. The nitrogen in animal excrement exists chiefly as urea in the urine of mammalia, uric acid in that of birds and reptiles. These substances when excreted are soon pounced upon by vigilant bacteria and converted into ammonia. The nitrogen in dead animals and plants exists chiefly in the form of proteids and albuminoids, &c.—all highly complex bodies. Under the influence of almost ubiquitous putrefactive bacteria these nitrogenous substances are broken down step by step till, as final products, there remain ammonia, free nitrogen, free hydrogen, methane, carbon dioxide, and sulphuretted hydrogen, the original nitrogen coming to exist chiefly as ammonia, and to some extent in the free gaseous state. That this task, which devolves upon bacteria, of converting proteid into these end-products of putrefaction is a highly complicated one may be indicated by enumerating some of the intermediate substances which are formed. Many of them are already familiar to you from the study of physiological chemistry.

1. Albumoses and peptone.
2. Aromatic bodies—indol, skatol, and phenol.
3. Amido compounds—leucin, tyrosin, aspartic acid and glycocol.
4. Fatty and aromatic acids—acetic, butyric, succinic, and valerianic.
5. Ptomaines.

As an illustration of the specialised function of the various species of bacteria, which decompose nitrogenous substances, it may be mentioned that those which convert urea into ammonia are unable to decompose proteids, and many of those which decompose proteids have no effect upon urea.

Though the liberation of nitrogen, in the form of ammonia, from dead animals, dead plants, and their excretions, is a step in the right direction accomplished by bacteria, the ammonia so produced is still unavailable to green plants as food. To be utilised by plants the ammonia must be converted into nitrates by oxidation to nitric

acid, the acid then combining with bases. The change of ammonia into nitrates is usually spoken of as nitrification, but some authors use the term in other senses. Nature has again assigned this task to certain of her faithful servants, called by scientists nitrifying bacteria. These organisms escaped detection and isolation till quite recent years, when it was discovered that they differed from other bacteria in not being tempted to feed and flourish on any of the usual elaborate dishes of the bacteriologist's cuisine, but that they are prototrophic—that is to say, thrive best on a purely inorganic diet. The conversion of ammonia to nitrates by these bacteria is accomplished by two distinct varieties, in two separate stages. One variety, called the "nitrite bacteria," oxidise ammonia into nitrous acid which forms salts called nitrites. The other variety, spoken of as "nitrate bacteria," instantly further oxidise the nitrites, and so convert them into nitrates. In the form of nitrates nitrogen is once more absorbed by the roots of green plants, to recommence the round of the food circulation. The two varieties of nitrifying organisms are always found together in soil, from which they may be grown in pure culture and their separate actions demonstrated.

The limits of bacterial activity in circulating nitrogen are not to be drawn here. Some nitrogen is always tending to drop out of circulation and become waste, as indeed might be expected, for Nature often appears to us prodigal in her methods. As before said, during the putrefaction of proteid some nitrogen escapes into the air in the free state, so is out of reach of plants in general. Rain is constantly washing nitrates from the soil away from plants. And again, owing to the commonly adopted system of drainage of large towns, the enormous store of nitrogen contained in sewage is carried away into the sea. It must be remembered that this nitrogen is originally taken from the country soil, brought to town in the shape of plants, animals, or their produce, and after passage through the human body is swept into the sea. The invention of sewage-farms tends to obviate this last ruthless nitrogen loss by returning to the soil that which was originally taken from it.

The irresistible conclusion to be drawn from the consideration of these losses through putrefaction, rainfall, and sewage disposal is that unless some method existed of capturing free nitrogen from the large supply in the atmosphere and transferring it to the food circulation, the amount of nitrogen available for plants and animals would be steadily diminishing. Bacteria again save the situation. Let us consider how they do so.

Plants of the natural order Leguminosæ—which includes peas, beans, clover, lupins, and vetch—behave differently from other green plants in their mode of obtaining their nitrogen. All other green plants, we have seen, absorb their nitrogen as nitrates and are incapable of storing up any more during their growth than they withdraw from the soil in this particular form. Leguminous plants, on the other hand, will flourish in soil which is markedly deficient in nitrates. Despite this deficiency they store up in their interior large quantities of nitrogen, and also enrich the soil in which they grow, in nitrogen compounds.

An experiment showed that a certain quantity of peas containing 16 mgr. of nitrogen, sown in mould containing 22 mgr., gave rise to a crop containing 499 mgr., whilst the quantity of nitrogen in the mould increased from 22 to 57 mgr. This made a total gain of 518 mgr. of nitrogen between plants and mould, the only possible source of the increment being the free nitrogen of the atmosphere. So it is that all other green plants are mere consumers of soil nitrogen, leguminous ones are accumulators of it. Experience forestalled science in teaching this lesson to the farmer. It taught him the advisableness of periodically growing a crop of clover on his cultivated land in order to maintain its fertility.

The power which leguminous plants possess of rescuing free nitrogen is not an inherent one, but the outcome of co-operation with certain bacteria called nitrogen-gatherers, or bacteria of root-nodules. If a seedling leguminous plant be examined, on its rootlets may be observed small roundish, firm nodules. The cells of which these nodules are composed, when examined microscopi-

cally, are seen to be impregnated with bacteria. As the plant grows these bacteria undergo degenerative changes, till, when the pods are ripe, the nodules have shrivelled, and the bacteria have almost vanished. In normal growth leguminous plants always form root-nodules which always contain bacteria. Growing on sterilised soil these plants do not thrive, do not form nodules, and have no more power to accumulate nitrogen than other green plants. Recently the bacteria of the root-nodules have been grown in pure culture, on a medium containing no nitrogen, yet after a while they accumulated nitrogen, necessarily withdrawn from the atmosphere. These facts point to the nitrogen-fixing power being solely an attribute of the bacteria, but the leguminous plants have a share in the rescue. It is owing to certain substances in the rootlets of young leguminous plants, which chemiotactically attract the nitrogen-fixing bacteria, that the latter gain access to the root. At first the bacteria rely upon the plant for their food supply. Later, becoming more independent, the bacteria draw their nitrogen from the atmosphere and yield it later chiefly to the seeds of the plants. Analysis shows that in the lupine at the time of flowering the root-nodules contain 5.2 per cent. of nitrogen, which, by the time the pods are ripe, becomes reduced to 1.7 per cent., whilst an almost corresponding increase of nitrogen occurs in the ripe seeds. It is well known that dried leguminous seeds, such as peas and beans, are richer in nitrogen than fresh meat.

It is claimed that the discovery of these nitrogen-fixing bacteria has led to results of pecuniary advantage to agriculturists. Seventeen pure cultures have been obtained from seventeen varieties of leguminous plants. These cultures are now articles of commerce, sold under the name of "Nitragin." If nitragin be diluted and mixed with either seeds or soil before sowing the resulting crop is largely increased. Especially is this the case in dealing with soils deficient in nitrates, as some of the marshy soil of North Germany. The best results are obtained by inoculating the soil with the variety of Nitragin appropriate to the seeds to be sown, or, in other words, with a

pure culture of nitrogen-fixing bacteria, cultivated from leguminous plants identical to those of the desired crop.

A recapitulation of the circulation of nitrogen may now not be out of place. Putrefactive bacteria decompose the nitrogen-holding substances in dead animals and plants, and in the excretions of living ones, into ammonia and some free nitrogen. Ammonia is seized by other bacteria and converted to nitrites, the nitrites by others and converted to nitrates, which then feed living plants, in their turn to feed living animals. The loss of nitrogen from this circulation by putrefaction and other causes is counteracted by the power which certain bacteria possess of abstracting free nitrogen from the atmosphere and yielding it up to certain plants. Once back to these plants the nitrogen has re-entered the food circulation and returns once more to the soil either from these plants directly, or indirectly through the medium of animals.

In circulating carbon bacteria play a no less wonderful part. We have already seen that a large amount of carbon interchanges from green plants to animals in the form of carbonaceous food, and from animals back to green plants in the form of carbon dioxide gas. The amount of carbon thus interchanging between living plants and living animals would be constantly diminishing were it not for the power bacteria and other micro-organisms possess of liberating by fermentative processes the carbon bound up in dead animals, dead plants, and in plant produce as free carbon dioxide gas. Once again, in the form of carbon dioxide gas the carbon is consumed by green plants and no longer lies idle.

Yet another instance of the uses of bacteria in supplying food for plants has come to light. The sulphuretted hydrogen gas formed during putrefaction of proteid is an offensive and injurious one, quite useless to plants. Bacteria, called sulphur bacteria, feed upon the gas and store up its sulphur, which ultimately is oxidised to sulphuric acid. The acid combines with bases to form sulphates, by which means sulphur again becomes available to plants as food.

Time will not permit of any further consideration of

bacteria as food purveyors. I trust it is now plain to all that they save this world from starvation.

But Nature employs bacteria as her handmaidens for the accomplishment of others of her great schemes besides those just discussed. They probably considerably contribute to the formation of soil by furnishing acids which soften the surfaces of hard rocks, thereby assisting the weather in its crumbling action.

Coal is now-a-days thought by some to be the result of bacterial action on dead vegetable matter, under peculiar physical conditions.

There are not wanting those who so labour the Darwinian theory of evolution as to contend that man's remotest ancestors were bacteria. The suggestion is not entirely devoid of scientific support. There is little doubt that at one stage of its existence this earth was barren of any living thing—even microbes. Assuming this to be so, of what description was the first living organism to appear? Surely some form of organism which did not depend for its existence on other organisms, but could live on inorganic matter; or, in other words, the organism most likely to first put in an appearance would be the one whose food was ready for it. Certain bacteria, we have already seen, have been discovered which fulfil these requirements by their capacity to feed on inorganic diet alone and to exist independently of all other life.

Now for a brief consideration of some of the industrial applications of bacteria.

The dairyman can record amongst bacteria staunch and valuable allies, since, in the manufacture of the best butter, they are indispensable. As is well known, cream before it is churned is subjected to a process called "ripening," which merely consists in allowing it to stand from 12 to 24 hours according to circumstances. During this time it acquires, along with other changes, a peculiarly pleasant flavour and aroma absent from perfectly fresh cream. These changes are due to bacteria, which instantly invade milk after it is taken from the cow, for there is no more suitable medium for the growth of many kinds of bacteria than milk. If the process of ripening is not terminated



at a suitable moment by churning, the further changes which bacteria produce are anything but desirable. It has been claimed amongst the advantages of "ripening" that a more rapid conversion of cream to butter is ensured, and also a larger yield of the desired commodity. The main object of ripening, however, is to secure for the butter the flavour and aroma of the ripened cream, for it is upon these almost entirely that the quality of the finished article depends. Up to recent years, and to a sad extent still, butter-making was a happy-go-lucky performance. The butter of different dairies, apparently all worked on the same principles, varied greatly in their flavours and aromas, and so in their demand and value. Even the most excellent dairies would often, for unaccountable reasons, yield bad butter. This want of uniformity in the quality of butter was formerly attributed entirely to the cow's food, health, &c. Now it is recognised that the most potent factor in the production of well or ill-flavoured butter is the variety or varieties of bacteria which have ripened the cream. This knowledge once acquired many devices were tried with a view to so modifying and controlling bacterial action in the cream as to ensure the certain and uniform production of good flavour and aroma. The various methods may be classified thus:—

1. By observing the strictest cleanliness in all things appertaining to the dairy undesirable species of bacteria will, in all probability, be prevented from contaminating the cream, as the connection between dirt and bad butter is a most intimate one.

2. Having once attained excellence in the flavour of ripened cream the cream was kept and used in small quantities to inoculate fresh cream. It was urged that in this way the bacteria which produced the good flavour might be kept *ad infinitum*.

3. Fresh cream may be inoculated with a pure culture of bacteria which has been isolated from the ripened cream of a dairy whose butter is of reputed high quality. The objection to this method, as also to the last-mentioned, is that the fresh cream may have become contaminated with unfavourable bacteria before the pure culture or the well-flavoured stock cream is added.

4. Before adding the pure culture the cream is sterilised—*i.e.*, all the bacteria in it are killed by heat. This method is the most scientific and accurate, and yields the most uniform high quality of flavour. It is extensively practised in Denmark and America, and to some extent in these countries. Transatlantic butter-makers give these pure cultures the unpoetic name of starters, as they start the ripening process in fresh cream. According to the species of bacteria in the starter will the butter be flavoured. In this way butter of a particular flavour can be made to suit a particular market, with corresponding pecuniary advantages to the manufacturer.

In like manner the flavour of different kinds of cheese is due to the action of different bacteria on the fresh curd.

The manufacturer of linen would be powerless to ply his business without employing bacteria. As is familiar to anyone whose wanderings have taken him past a flax-hole in the North, putrefaction is much in evidence in the preparation of linen-fibres. The object of the putrefaction is to soften away the worthless portions of the flax plant which intimately bind together the valuable linen fibres. No mechanical method of separating the linen fibre has ever been discovered that can dispense with this bacterial putrefaction, called in the trade "retting." The particular bacteria responsible for the "retting" of the flax have been discovered and isolated.

Time will only permit mention of one more industrial application of bacteria, for the list is hopelessly long to attempt completion. The one I shall choose is the manufacture of smoking tobacco, since its widespread employment appeals to the senses of both smokers and non-smokers. Before tobacco leaves are sent to the manufacturers they are fermented in heaps. Subsequently they are cured in a great variety of methods, in all of which fermentation is largely employed. The fermentations necessary to produce smokable tobacco are the work of bacteria. These bacteria have been the subjects of extensive experimentation, from which it has been concluded that the flavour of tobacco far from being entirely attributable to the plant itself, or the locality in

which it is grown, is largely in the hands of bacteria. Dexterous manipulation of the varieties of bacteria isolated from tobacco in process of curing has enabled the industrial bacteriologist to impart the flavour and aroma of Havana cigars to tobacco leaves hitherto less highly prized.

In this address, gentlemen, it has been my object to encourage by example communications on a wider range of biological subjects than heretofore has been customary in this Association. From my own experience, on this occasion, I can assure you that such papers being change from purely medical work would afford you refreshing rest. Furthermore, there can be little doubt that even a smattering of biology in its unrestricted sense is conducive to that breadth of mind which daily becomes more essential in trying to shape definite forms from the seething mass of detail with which one is confronted in the study of medicine.

#### MICROCOCCI IN VARIOLA.

VANSELOW and CZAPLEWSKI (*Vierteljahrsschr. f. gerichtl. Med.*, 1899, Heft 1) believed they had found an organism closely connected with the variola process, in what was previously named by Klebs the *Micr. quadrigeminus* (Klebs). It was very like the *Micr. pyogenes albus*. However, it liquefied solidified blood-serum, which the typical *Micr. pyogenes* is said not to do; its colour is reddish, but in this property it is variable, as is to be expected. They have already retracted this hardly probable suspicion (*Centralblatt XXV.*, 546). Almost simultaneously Sanfelice and Malato (*Centralblatt XXV.*, 641) have reported that a coccus can be constantly cultivated from cases of variola which cannot be differentiated morphologically from the *Micr. (a) aureus*, but differs in its pathologic action from all other cultures of *Micr. pyogenes* isolated by the authors. When injected into the circulation, hyperæmia of the skin and mucous membrane and sharply outlined hæmorrhages occur. Regarding the much controverted "*Cylortyces variolæ*" (Guarnieri's) of the group of protozoa, consult the literature in Galli-Valeri's "Kritische Uebersicht über den Zusammenhang der Variola mit Vaccine" (*Centralblatt XXV.*, 380 and 424). [Lehmann's and Neumann's "Atlas and Principles of Bacteriology." Edited by Geo. H. Weaver, M.D. W. B. Saunders & Co. 1901. Part II. Text. Pp. 187 and 188.]

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Encyclopædia Medica.* Under the General Editorship of CHALMERS WATSON, M.B., M.R.C.P.E. Volume III.: Diphtheria to Food. Volume IV.: Foot to Hernia. Volume V.: Herpes to Jaws. Edinburgh: William Green & Sons. 1900 and 1901. 8vo.

III.—THE opening chapter in the third volume deals with Diphtheria, and Dr. Goodall gives a very full and complete account of the disease. He “ventures to doubt whether a throat affection renders the individual more susceptible than does any disease which lowers the power of resisting the attacks of pathogenic micro-organisms.” We are inclined to think that it does, and the writer further on states that diphtheria “appears to have an especial liking for scarlet fever and measles,” due, we have little doubt, to the fact that throat lesions are almost invariably found associated with them.

In discussing the treatment of diphtheria the author gives a useful and exhaustive account of the most recent investigations into the value of antitoxin treatment, and dealing with the question of its utility in preventing the distressing paralytic sequelæ that so often occur, agrees with other writers that early treatment and large doses (4,000 units and upwards) are the most effective means of gaining this favourable result. We are glad to find that local treatment is still advised, as we believe it is a useful adjunct to the antitoxin, and may possibly be of service in shortening the period of enforced isolation.

Dysentery, as in most text-books, is still employed to cover more than one distinct affection, and is defined “as a group of closely allied infective diseases, characterised by frequent mucous, bloody, or serous stools, by griping pains

(tormina), more or less straining (tenesmus), generally with retention of fæces."

The distinction between the amœbic and non-amœbic varieties of the disorder is now so well known and generally recognised that we would have welcomed a completely separate account of each. The author, indeed, anticipates in the future a further sub-division, for he says:—"The diversities observed in the clinical features and in the lesions of non-amœbic dysentery, taken along with the results of bacteriological researches, indicate that this form will ultimately be found to comprise two or more distinct varieties."

Apart from the slight confusion that arises in describing under one heading types of a disease which differ so materially in nearly all respects, the article is one well worth perusing, especially when the writer treats of the bacteriology and pathological anatomy of the disorder.

Diseases of the Ear are entrusted to seven authors of well-established reputation, each taking a special subject such as External Ear, Tympanic Membrane, &c.

The entire article occupies 90 pages, and forms a complete monograph on the affections of this organ.

Eclampsia and Ectopic Gestation are subjects of great interest, especially to the obstetric physician, and Drs. Jellet and Halliday Croom are to be congratulated on the clear and concise manner in which they have presented them to the reader.

We agree with the former in considering it "most rational in the present state of our knowledge to consider eclampsia, not as the result of one definite condition, be it of the liver or of the kidney or of the higher centres, but rather as the result of the undue stimulation of the nerve centres by toxic substances, the direct or indirect result of the pregnancy, circulating in the blood, or of peripheral irritation from the genital tract."

Dr. Leslie Roberts contributes the article on Eczema. He finds the same difficulty that others have found in giving a satisfactory classification of the disease. He does not approve of dividing the eczematous eruptions into four groups according as the predominant lesion is papular,

vesicular, pustular, or erythematous, but arranges the various forms on certain broad principles:—

Class 1. Accidental eczemas (trade and traumatic dermatitis).

Class 2. Intrinsic eczema (*eczema vulgaris*).

Class 3. Mycoriform eczemas (*seborrhœic eczema*, Unna; *seborrhœa corporis*, Duhring). We doubt if there is much advantage gained by this classification, but until a more accurate knowledge of the pathology of eczema is obtained there will never be anything approaching unanimity in the description of the disease, as it clinically presents so many diverse forms.

The practitioner will, perhaps, find the latter part of the article the most useful. In it the author briefly describes the appearances of the different regional forms of eczema, and gives an account of the treatment most likely to be of benefit in each.

A short, yet clear and practical account of Electricity, especially in its application to medicine, is from the pen of Dr. Wilfrid Harris. We agree entirely with him that the benefits following its use in treatment would be much greater were the proper means of employing it more fully understood. The author has rendered it easy and possible for every practitioner to acquire this knowledge.

Dr. Nuttall gives a very full description of Filiariasis, and includes under the term all diseases both of man and animals which are due to the presence and action of filariæ. No doubt this renders the article more complete, but we are inclined to think that unnecessary space has been occupied in describing these forms, which are not found in man.

The account of the *filaria Bancroftii* and its pathogenic effects is excellently told, and we are sure the article will prove most helpful, especially to those whose practice brings them in contact with the disease.

There are very many other articles in this volume which are deserving of special mention, but we cannot include all in a short review. The few we have chosen exemplify the wide scope of this work, and show, if proof were necessary, that it is one of value both to the specialist and general practitioner.

IV.—The fourth volume is not behind any of its predecessors in point of merit. It contains several somewhat lengthy articles of considerable interest and importance.

Mr. D'Arcy Power writes on Fractures, and illustrates the text with numerous well-drawn diagrams. "Diseases of the Gall-bladder and Bile-ducts" is a subject which Mr. Mayo Robson has made peculiarly his own, and we are, therefore, not surprised to find that the editor has enlisted his services on the present occasion. The treatment of the subject leaves nothing to be desired, as it is clearly and concisely given—the points of differential diagnosis between the different affections of this region being especially good.

To compress into 30 pages a clear account of the Gastro-intestinal Disorders of Infancy is no easy task, and Dr. Still is to be congratulated on the manner in which he has accomplished it. The difficulty of classifying the disorders of digestion, especially of infants, according to the pathological changes that are present is so great and so often a mere matter of speculation, that we think the author has followed the wiser course in treating the subject rather from a clinical than a pathological standpoint.

He rightly lays stress on the importance of carefully attending to the feeding of infants in all such cases, and we are glad to find that he considers the majority of cases of infantile diarrhœa infective, that is, due to micro-organisms, not necessarily always the same, and probably in many cases due not to one organism but to several.

We doubt if it is necessary or wise in a work of this kind to devote a separate article of over twenty pages to the Anatomy, including the Histology, of the Female Organs of Generation. Those who require a special knowledge of this subject are hardly likely to refer to it—no one else will ever read it.

The editor has himself undertaken the task of contributing the article on Gout. So many writers on this subject have propounded definite theories of their own as to its causation that it is refreshing to find one who is willing to acknowledge that "after ages of inquiry we know gout only by the order and character of its phenomena, and

have yet to learn its intimate nature or the special causes which produce it." The description of the symptoms of the disease as it affects the different systems, the exhaustive analysis of the views held by previous writers, and the full account of the treatment, both dietetic and medicinal, render the article a valuable addition to the current literature of gout.

Somewhat more than a fourth of this volume is devoted to a consideration of the Heart and its Disorders, and the six authors to whom the work has been entrusted have succeeded in producing a carefully compiled monograph on the subject. We can recommend it to the reader as a close perusal has convinced us that it is very practical and thoroughly well up to date.

The volume concludes with an account of Hernia by Mr. Moynihan. The description of the different varieties is greatly assisted by the aid of diagrams, and the details of the operative procedures now in vogue for the radical cure of both inguinal and femoral hernia are clearly if briefly told.

We have only to add that much valuable information will be found in the numerous short articles which are included in this volume.

V.—While fully alive to the difficulties in selecting what subjects are to be included in a work which endeavours to be as comprehensive as possible, and relegating the proportionate amount of space for each, we cannot think that all in the fifth volume have been wisely chosen. An account of Hospitals, where and how they should be built, and this compressed into four pages, is not likely to serve any useful purpose. A purely pathological discussion on the general subject of Hypertrophy is also to our minds foreign to a work of this description, while the perpetuation of such a vague and unscientific term as Indigestion for the title of a special article is quite indefensible. We confess to a feeling of pity for the author who has undertaken the task. At the outset he is bewildered by the vagueness of his subject, and declares that "the term indigestion



serves as a cloak to cover a multitude of dyspeptic disorders, some of which come throughout their entire course under the name, others only so long as clear evidence of the presence of a distinct morbid lesion is wanting." He attempts to make a "classification of the cases of indigestion," and having occupied the better part of a page in this endeavour, reminds the reader that this "must not be regarded as being in any way either exhaustive or complete. Space forbids a further elaboration." For this we are truly thankful.

In alluding thus to the above we do not wish it to be inferred that the present volume is below the standard of its forerunners. There are many articles of average excellence to be found in its pages, and some of exceptional merit.

A general account of Insanity by four special experts occupies over 100 pages, and deals with the subject in a clear and exhaustive manner.

Sir John W. Moore contributes an article on Influenza. Illustrative cases drawn from his own experience serve to show the varied types which the disease assumes, and its effects on the different systems are given in minute detail. The short historical note at the commencement and the paragraph on ætiology will also be found full of interest.

A very comprehensive study of Hysteria is given by Dr. Paul Sainton, of Paris. He groups the symptoms "for the sake of lucidity according to the systems or organs of which they indicate functional derangement," and draws attention to the importance of recognising the difference between those which "are variable and merely accidental" and those which "are invariable and form 'the stigmata of hysteria.'" We regret that he has only found it possible to describe the differential diagnosis between epilepsy and hysteria. That it would have been impossible to include all the disorders it may simulate we freely admit, but we would have welcomed a more extended list. We do not find much fresh light thrown on the difficult subject of treatment, and we are glad to see the very guarded opinion he gives on the employment of hypnotism as a therapeutic agent.

The surgical aspects of hysteria are discussed by Dr. Miller, and Dr. Still writes on hysteria in childhood.

The latter writer is also entrusted with the article on Infant Feeding. As the importance of this subject can hardly be over-estimated, we welcome the valuable contribution he has given to this volume.

Medical Diseases of the Intestines, by Dr. Ruxton, is an account of most of the disorders which primarily affect the small intestines, such as enteritis, ulcers, &c., diseases of the colon are described elsewhere; while "Surgical Affections of the Intestines" is simply another name for intestinal obstruction. Mr. Rutherford Morison contributes this latter article, and gives a very careful analysis of the different forms of obstruction, their differential diagnosis and treatment.

We cannot omit to call special attention to the exceedingly interesting and carefully compiled article on Invalid Feeding by Mrs. Chalmers Watson, the accomplished wife of the general editor. Those in search of knowledge on this subject will find in it a mass of information—the pages contain numerous receipts for invalid foods, the methods of preparing them are accurately given, and suitable dietaries for special diseases are also included.

Articles on Jaundice by Dr. Rolleston, on Injuries and Diseases of the Hip-joint by Mr. D'Arcy Power and Mr. Alexis Thomson, on Hydatid Disease by Dr. Ritchie, and on Ichthyosis and Herpes by Dr. Pringle are among the many others to be found in this volume.

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*Essay on Human Nature.* By M. C. HIME, LL.D., sometime Head Master of Foyle College, Londonderry. London: J. & A. Churchill. Dublin: Ed. Ponsonby, 116 Grafton-street. 1901.

In dealing with any subject concerning the welfare of young men, Dr. Hime speaks as one with authority. Already he has published volumes on such subjects as "Morality" and "Parting Words to Boys leaving School." Hence the present essay—which was read

originally before a Young Men's Christian Association—is really one of a series, and in no way unworthy of its predecessors.

It is not that there is anything particularly original in this little volume—indeed Dr. Hime would be the first to disclaim such an idea—but we recommend it because it recognises and answers that fallacious belief which so many young men hold—namely, that the weakness of human nature is in itself an excuse or even a justification for sin. Advisedly do we use the word “recognises,” because the tendency of the majority of religious writers is to imagine that because this opinion is not openly expressed, therefore it is not widely held. The writer's long experience as the head master of a public school prevents his being led into any such position, and so his writing has, to begin with, the merit of practical utility in dealing with the subject. The author first quotes the statement that “it is the nature of man to sin,” and then proceeds to combat this by defining the words “nature” and “sin” from the Christian standpoint. In examining the former word he states the three active principles which we find in the human constitution—namely, the propensions, self-love, and conscience, and deals at length with each of them. His attitude as regards the last is that of Bishop Butler, that it is “the voice of God speaking within us,” but he takes care to add, “Uneducated, unenlightened, uninstructed conscience could be no more a trusty guide for us to follow as to moral conduct than would be a watch if uncleaned and unregulated, and only occasionally wound, in regard to time.”

The conclusion is drawn by the writer with mathematical precision. “Since, then, conscience is by its very nature irreconcilably opposed to wrong-doing of every kind, and since nothing is ‘natural’ to which conscience is opposed, therefore sin is *not* ‘natural.’” Q. E. D.

Altogether we think Dr. Hime has, so far as his space permitted, admirably dealt with a difficult problem, and we recommend the book to all who have at heart the welfare of young men.

*Handbook of Physiology.* By W. D. HALLIBURTON, M.D.,  
F.R.S. Fourth Edition. London: John Murray. 1901.  
Pp. 888.

It is again our pleasing duty to call attention to a new edition of this excellent and deservedly popular handbook. Although only a year has elapsed since the appearance of the last edition many alterations and additions have been made, and, as the author tells us, scarcely a page remains as before. Some important new sections have been added, such as those dealing with the import of Nissl granules in the nerve cells, the movements of the stomach as investigated by Röntgen photography, and the electrical currents in the eye-ball; but, notwithstanding this, the size of the volume remains practically as before, being only sixteen pages longer, while thirteen additional figures are given—so that matter has had to be removed as well as added.

The only objection we have to make to the book is one relating to the arrangement of the subjects. In the first edition Professor Halliburton put the nervous system first; but this arrangement was altered in the second edition, and the nervous system now stands where it usually does, near the end, after all the vegetative functions, except reproduction, have been dealt with. But still the chapter on the blood occupies a strange and, to our mind, objectionable position, coming after the sections on the circulation and respiration. The chapter on the chemical composition of the body also would, we venture to think, be better in an earlier part of the volume—immediately after, or, perhaps, even before, the chapters on histology.

The previous editions were styled “Kirkes’ Handbook of Physiology.” This has been changed in the present issue. “The time-honoured name of Kirkes” is now omitted, and the work appears under the name of the distinguished author, who has not edited or improved the work of Kirkes, but has written an entirely new book, whose popularity would seem likely to exceed even that of the older handbook. This popularity seems to be as great on the other side of the Atlantic as on this, and repeated complaints have been made by author and editor of unauthorised publications of their work in America. The editor

in his preface hopes that the change of name will serve to distinguish the genuine from the pirated book. We hope so, too, but we have our doubts.

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*Photographic Atlas of the Diseases of the Skin.* By GEORGE HENRY FOX, A.M., M.D.; Clinical Professor of Diseases of the Skin, College of Physicians and Surgeons, N.Y.; Consulting Dermatologist to the Board of Health, New York City; Physician to the New York Skin and Cancer Hospital, &c. Philadelphia and London: J. B. Lippincott Company. 1901. Parts VII. to XII.

So recently as September, 1901, in Volume CXII., No. 357, third series of this journal, the first six parts of this fine Atlas were favourably noticed. It is not necessary to do more than notify the publication of another instalment of the work, which will—when completed—consist of a series of eighty plates, comprising more than one hundred illustrations.

In the six parts, which are now under review, the text describes skin affections in alphabetical order from "Elephantiasis" to "Pemphigus," with a running commentary on cutaneous therapeutics.

Each part, as usual, also contains five plates of tinted photographic illustrations of skin affections. Those which are represented in Part VII. are impetigo contagiosa, lupus serpiginosus, syphiloderma pustulosum, purpura, and eczema cruris, in two photographs.

Part VIII. contains plates showing chloasma, chromophytosis diffusa, psoriasis circinata, lichen planus hypertrophicus, and tuberculosis verrucosa (the last in three photographs). •

In Part IX. we have photographs of herpes faciei, lupus exedens, syphiloderma tuberculosum, ichthyosis, and keloid (two specimens).

Part X. shows rosacea pustulosa, dermatitis medicamentosa from balsam of copaiba, psoriasis diffusa, lichen ruber papulosus, and keratosis diffusa et follicularis.

Part XI. has plates illustrative of dermatitis herpeti-

formis, nævus pilosus, syphiloderma ulcerativum, eczema squamosum, and dermatrophia maculata et diffusa.

Lastly, in Part XII., are shown erythema annulatum, erythema papulatum, lichen ruber squamosus, nævus vascularis, and trichophytosis, in three photographs.

We can but repeat that this Atlas is highly artistic, and we once more wish the author and the publishers every success in their praiseworthy enterprise.

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*Handbuch der physikalischen Therapie*. Herausgegeben von DR. A. GOLDSCHIEDER und DR. PAUL JACOB. Theil I. Band II. Leipzig: George Thieme. 1901. Pp. 535.

THE editors are to be congratulated on the rapid appearance of the second volume of this great work. In our notice of the first volume (*Dub. Med. Jour.*, June, 1901; we described the plan and scope of the book, and expressed our high appreciation of the thoroughness with which each subject was treated. The same character of completeness and the same exhaustive treatment is manifest in every article in the volume before us. In it five chapters are contained. The first is on massage. The sections on the history and physiology are by Dr. Anton Bum, while the sections on the technique are by Dr. Zabłudowski. A final section, on the relationship of massage to other physical methods of treatment and the medical applications of massage, is by Dr. von Reyher. Dr. Bum considers that, in the first place, massage has a depletory action, as it hastens the circulation, removes stasis, and favours absorption. It exerts a stimulating action on muscles and nerves, improving their functional activity, and helps to remove pathological adhesions of parts. The so-called dynamic or general action rests almost exclusively in its influence on the circulation. This article is copiously illustrated by figures showing the various methods by which massage should be applied. Each section ends with a very complete bibliography.

The second chapter is on gymnastics, in which all the different kinds of exercise are included. The historical

introduction is by Dr. Pagel; the physiological section by Professor Zuntz; the sections on exercise and sport—such as mountaineering, swimming, bicycling, rowing, skating, &c.—by Dr. Leo Zuntz; the section on Swedish gymnastics by Dr. E. Zander; that on *Uebungstherapie*, or the influence of practice and attention, by Dr. Paul Jacob; and a section on the different kinds of movement and gymnastics carried out with various apparatus (exclusive of Swedish gymnastics) by Dr. R. Funke. This chapter contains very noteworthy sections. That on the physiology of movement and the effect which muscular exercise has on metabolism is a truly masterly work, such as few men besides Professor Zuntz could produce. The article on Swedish gymnastics is by the greatest living authority on this subject, and that on *Uebungstherapie* is full of valuable and suggestive matter. This chapter is, like all the others in the volume, copiously illustrated and provided with very extensive lists of writings on the subjects with which it deals.

The third chapter is on mechanical orthopædics. It consists of three sections, which are all written by Dr. Vulpius.

The fourth chapter is on electro-therapeutics. The historical introduction is by Dr. Pagel, the sections on physiology and electrical procedures by Dr. Ludwig Mann, and the section on the relation borne by electricity to other physical methods of treatment, and on the medical value of electro-therapeutics, is by Dr. M. Bernhardt.

The last chapter is on light treatment. The historical introduction is by Dr. Marcuse; the sections on the physiological and therapeutical action of light are by Professor Rieder. This author attributes the effects produced by the Finsen treatment of lupus not to the bactericidal action of the light, but to a reactive inflammation excited in the diseased part. Similar action is produced by the Röntgen rays, by alcohol, local application of heat, and many other means. "All these assist the organism in its struggle with the bacilli since *natura sanat medicus curat.*"

In conclusion, we can only repeat our unqualified praise

of this magnificent work, which has no rival in its own field.

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*A Manual of Medicine.* Edited by W. H. ALLCHIN, M.D., Lond.; F.R.C.P., F.R.S., Edin. Vol. II. General Diseases Continued. Crown 8vo. London: Macmillan and Co. 1900. Pp. 376.

THE second volume of this excellent manual is quite up to the expectation; that were aroused by a perusal of the first.

Drs. T. W. Shore and James Cantlie are responsible for the chapters dealing with the diseases caused by parasites. The articles are in each case concise, and for the most part suitably illustrated. In particular, the chapter on African lethargy is full of interest, and records the present position of pathologists in regard to the relationship between the *Filaria perstans* and the disease in question. Investigation has not proved that they stand to each other in the relation of cause and effect.

The editor and Dr. G. V. Poore have undertaken the section which treats of "Diseases determined by poisons introduced into the body as such." Under this heading are arranged Food Poisoning, Alcohol, Opium and Morphia, Cocainism, Metallic Poisons, Noxious Gases, and Serpents' venom. The editor deals briefly with the auto-genetic poisons—viz., Uræmia, cholæmia, acetonæmia, and the typhoid state. He then condenses our knowledge on what he calls retrogressive changes—necrobiosis, dwelling more especially on "the changes which are of wide-spread distribution throughout the body and are responsible for general or important manifestations." Under this heading are placed atrophy, fatty degeneration and infiltration, lardaceous degeneration and senility.

Dr. W. S. Lazarus-Barlow's name in association with the article on inflammation is evidence of the care with which the pages devoted to this subject have been written. He deals with the phenomena of inflammation as observed in the frog, with the cardinal signs, the causes, varieties, sequels, significance, and, finally, the principles of treatment of the condition.



The editor has undertaken a chapter on Malignant Disease in which the general and anatomical characters, the origin, ætiology, and clinical features of malignant growths are briefly set forth. In regard to their origin he explains the theories of Cohnheim and Virchow, but deals at more length with the infective theories of recent investigators.

Dr. J. Rose Bradford has been entrusted with the short articles which appear on the General Physiology and Pathology of Ductless Glands. Cretinism, myxœdema, exophthalmic goitre and Addison's disease are each dealt with in a lucid, concise, and interesting manner.

The editor is responsible for the chapter on Obesity, which includes a description of that rare affection, adiposis dolorosa, and needless to say he discusses the various dietaries which their authors have vaunted in the treatment of the obese. Diabetes mellitus and insipidus and rheumatoid arthritis have secured a worthy exponent in Dr. Bertrand Dawson, while Dr. Arthur Luff deals with the numerous manifestations of gout in a simple and practical way.

Dr. J. A. Coutts has a very readable chapter on Rickets, while Dr. Raymond Johnson writes of Acromegaly and other conditions in which changes occur in the bones.

To the able hands, however, of Dr. Sidney Coupland and Dr. Louis Jenner has been entrusted the lion's share of the work in the present volume. More than one-quarter of the contents of the book has been devoted to a description of the blood and the diseases thereof. As might be anticipated, the articles are well worth perusal, and to those who are beginning on their own behalf to use the microscope as an aid to diagnosis in diseases of the blood, the methods of staining preparations and the coloured plates will be found of the greatest service.

It may be noted that there is still an absence of sufficient definiteness when the characters of the blood in Hodgkin's disease are under discussion; for example, the writer says "Still cases in which this lymphocytosis does occur have been related, rendering the distinction, at this stage of the illness, from lymphatic leukæmia almost impossible." Can such cases not now be excluded?

On the whole, this volume possesses the excellent qualities of conciseness, modernism, and cheapness.

*Surgical Diseases of the Kidney and Ureter, including Injuries, Malformations, and Misplacements.* By HENRY MORRIS, M.A., M.B. (Lond.), F.R.C.S.; Vice-President and Chairman of the Court of Examiners of the Royal College of Surgeons; Senior Surgeon to the Middlesex Hospital; Honorary Member of the Medical Society of the State of New York; Author of the Hunterian Lectures (1898) on "The Origin and Progress of Renal Surgery," of "Injuries and Diseases of the Genital and Urinary Organs," and of "The Anatomy of the Joints," &c., &c., and Editor of "A Treatise of Human Anatomy by Various Authors." With two coloured plates, and upwards of two hundred engravings. In two volumes. Vol. I., pp. 682. Vol. II., pp. 670. Cassell & Co., Ltd. 1901.

Those who are acquainted with the previous works of Mr. Henry Morris will hail with delight the appearance of the volumes before us.

In his manual on the "Surgical Diseases of the Kidney," published in 1884, he gave us an accurate account of the progress of this important branch of surgery up to that time, the subject being then merely in its infancy compared with its present position. Since the appearance of that treatise in 1884 every available journal and work that appeared in the English or European languages relating to the progress of renal and ureteral surgery has been consulted, and abstracts made therefrom, so far as necessary to keep abreast with what was being accomplished in this department. The treatise now before us is the outcome of these advances plus the author's own experience during all those years. Few, indeed, could estimate how extensive the literature on these subjects has become, and how enormous the work the author has set himself to accomplish, but perhaps some idea of it may be formed from the fact that the list of authorities referred to exceeds 1,000, some of whose contributions are not simply papers

but comprehensive treatises. It would be quite impossible to select one chapter from these two volumes as more important than another. Every subject is extensively and practically dealt with. Beginning with the regional anatomy, and passing on to the abnormalities of the kidney—a section of vast importance to the operating surgeon—and clinical examination, Part I. ends with operations on the kidney. In the section devoted to movable and floating kidney the author shows the proper anatomical distinction between these two conditions, but for convenience of description he uses the terms movable and floating kidney indiscriminately, except when one or other type is specially referred to; it is then designated by the term “movable behind the peritoneum,” or “floating kidney without a mesonephron,” or “floating kidney with a mesonephron,” as the case may be.

The operation of fixing the kidney by the transperitoneal method is rightly condemned. The author naturally prefers his own method of performing nephropexy, which consists in exposing the kidney by the lumbar incision, and passing three sutures deeply through the kidney substance and fastening them to the tissues of the edges of the wound. The suture material is silk, the ends of which are cut short and thus buried. Though stating his preference for this method he does not limit himself to one plan of operating.

In connection with tubercular disease of the kidney conservatism is strongly advocated in preference to total nephrectomy in certain selected cases. Seven cases are mentioned in which the author himself performed the operation of partial nephrectomy, in three of which, however, total nephrectomy had to be subsequently performed, but the other four were alive and well at considerable periods after operation.

One case we may be pardoned for mentioning as extremely interesting. It is that of a patient who had one kidney removed in Canada, and the author subsequently excised about *one-third* of the remaining kidney, the patient being alive and actively engaged as a domestic servant when this was written (four years after). The chapters devoted to renal calculus and calculous anuria are

excellent. The conclusions drawn regarding the treatment of renal calculus are eminently practical. We think, however, that the author will subsequently modify, if indeed he has not already done so, the views he expresses relative to the value of X-ray photography in the detection of stone in the kidney.

Part II., devoted to the surgical diseases of the ureters, comprises almost 400 pages. Here, again, it is not difficult to recognise the immense progress made within recent years in the diagnosis and treatment of the various conditions met with in connection with this duct. Every chapter from No. I., on the Anatomy of the Ureter, to Chapter XX., on Ureterectomy, is comprehensive and practical. The various operations, plastic and otherwise, are accurately described and fully illustrated. Space prevents a more exhaustive review, but suffice it to say in conclusion, that the author discusses the various problems in connection with the extensive field of the surgery of the kidneys and ureter with rare judgment, while he has placed a vast amount of information before his readers in an interesting and easily assimilable manner. We heartily congratulate Mr. Morris on the success with which he has accomplished his undertaking. The work is by far the best on these subjects in the English language, and one of which British surgery may well feel proud.

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*The Diagnosis of Gallstone Disease.* By PROFESSOR HANS KEHR. Authorised translation by WILLIAM WOTKYNs SEYMOUR, A.B., Yale; M.D. Harvard; formerly Professor of Gynæcology in the University of Vermont; Fellow of the American Association of Obstetricians and Gynæcologists; Surgeon to the Samaritan Hospital, Troy, New York. With an introduction by Professor Kehr. London: Henry Kimpton. 1901. Pp. 370.

THE book is divided into two parts.

Part I. consists of four lectures devoted to the pathology and pathological anatomy of cholelithiasis, the "amnesia" and examination in cholelithiasis, the special diagnosis of gallstones, and, finally, the treatment of this condition.

Much power of discernment is not necessary to recognise that these lectures are the outcome of an extensive practical experience and keen observation on the part of Professor Kehr.

That this is so will, perhaps, be more forcibly emphasised when we state that at the time these lectures were written the author had performed 433 laparotomies for gallstone diseases.

Part II., consisting of almost 200 pages, is devoted to a study of the clinical history and accurate comparison of the symptoms and signs manifested in 100 cases with the pathological conditions found at operation. A careful perusal of these histories, though necessitating a good deal of repetition, will render the views expressed by the author in the first part more explicable. The cases are illustrative of the following conditions:—

1. Stones in the gall-bladder with normal or but slightly altered walls; cystic duct patent; contents, clear bile; no adhesions.

2. Stones in the already often inflamed gall-bladder; cystic duct patent; contents pure or but little altered bile; adhesions.

3. No stones in the gall-bladder; cystic duct patent; contents, pure bile; adhesions.

4. Acute cholecystitis in a relatively but little altered distensible gall-bladder.

5. Acute cholecystitis in contracted gall-bladder.

6. Hydrops chronicus cystidis felleæ.

7. Empyema chronicum cystidis felleæ.

8. Carcinoma of the gall-bladder.

9. Acute obstruction of the choledochus by stone.

10. Chronic obstruction of choledochus by stone.

11. Chronic obstruction of choledochus by tumour.

12. Inflammatory or lithogenous jaundice.

13. Stomach or gall-bladder or both affected.

14. Gallstone ileus.

15. The difficulty and impossibility of special diagnoses in certain cases.

It is by thus showing the connection between the pathological changes and the clinical phenomena that we can

arrive at a thoroughly scientific and proper mode of treatment.

We desire to congratulate Professor Kehr on the lucid and practical manner in which he treated the subject of gallstones.

To Dr. Seymour must, of course, be given a word of thanks for translating Professor Kehr's work, and thus placing his views before those who cannot read the original, but we must express the opinion that the value of Professor Kehr's work would not have suffered, nor his views have been the less forcibly expressed by using a little more freedom in the translation, and not sticking so closely to the German. The grammatical errors would have been fewer, while the idioms and modes of expression would have been more in conformity with those of an educated man and not so like those of an uneducated schoolboy.

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*Bacteriology and Surgical Technique for Nurses.* By EMILY M. A. STONEY, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill.; Author of "Practical Points in Nursing," "Practical Materia Medica for Nurses," &c. Illustrated. London: W.B. Saunders & Co. 1900.

WITH a feeling of sadness we take up this last work from the pen of the late Miss Emily Stoney, and the feeling grows with the charm of its perusal. She fully discusses the origin and growth of the germ theory of disease, and of the use of antitoxins and of antiseptics, which have conferred such inestimable benefits on the human race. From this she proceeds to the most approved methods of their use, and to advanced instruction for the nurse in preparation for operations, and in the various appliances she may be called upon to supply and to use skilfully under the surgeon's directions. Anæsthetics, disinfectants, sterilising of instruments, &c., with the after-care of the patient and symptoms of danger, are so exhaustively explained that this work must prove a valuable addition to

the library of the practical and intelligent nurse, who will mourn with us the loss of this gifted teacher.

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*Diseases of the Thyroid Gland.* Part I. Myxœdema and Cretinism. By GEORGE R. MURRAY, M.A., M.D. Camb.; F.R.C.P.; Head Professor of Comparative Pathology in the University of Durham; Physician to the Royal Infirmary, Newcastle. London: H. K. Lewis. 1901.

Dr. GEORGE MURRAY is entitled to be regarded as one of the highest authorities on the diseases which accompany or follow pathological conditions of the thyroid gland. A perusal of Part I., which deals with myxœdema and cretinism, leaves the reader satisfied that the author has dealt in an interesting and exhaustive manner with the diseases referred to. The first chapter, consisting of 29 pages, treats of the structure and functions of the thyroid gland. The second one deals with myxœdema in over 50 pages, and half that number is given to cretinism in the final chapter.

The treatment of these two allied conditions is naturally the subject of most interest in the book, for to Dr. Murray himself medical science is indebted for the happy results which follow the administration of thyroid extract in these formerly hopeless diseases.

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*Clinical Examination of the Urine and Urinary Diagnosis : A Clinical Guide for the Use of Practitioners and Students of Medicine and Surgery.* By J. BERGEN OGDEN, M.D.; Instructor in Chemistry, Harvard University Medical School; Assistant in Clinical Pathology, Boston City Hospital, &c. Illustrated. Philadelphia: W. B. Saunders & Co. 1900. Pp. 416.

THIS work is divided into two parts. In the first an account is given of the urine, its constituents, and the modes of examination, chemical and microscopical. There are numerous illustrations, most of which are good, but those of tube casts are distinctly poor.

Part II. has reference mainly to the diagnosis of

disease by means of the characters of the urine. Thus, the features of the urinary secretion are described as they are found in disease both of the urinary organs and of the system as a whole. These sections are, as a whole, good, but in places we have noticed too dogmatic statements. Sufficient weight is not allowed to the variations in the urinary characteristics in two cases of one and the same disease. Thus, we cannot agree with the statement that "the diagnosis of an uncomplicated passive hyperæmia of the kidneys (renal congestion in chronic heart disease) can usually be made from the urine without a knowledge of the clinical history or physical examination."

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*Text-Book of Medicine.* Edited by G. A. GIBSON, M.D., D.Sc., F.R.C.P., Ed.; Physician to the Royal Infirmary, Edinburgh. In two volumes. Edinburgh and London: Young J. Pentland. 1901. Pp. 824 and 909.

THESE handsome volumes form one of the most important text-books on medicine published by the British School during recent years. The work is the product of thirty-six writers, each eminent in his own specialty, and the whole is ably edited by Dr. Gibson. The whole forms a treatise on medicine, the scope of which might, perhaps, be illustrated by comparing it with Dr. Clifford Allbutt's "System." The books before us are written on somewhat similar lines to that well-known series, but these two volumes form a work which is about one quarter of the size of Dr. Allbutt's. A good many of the writers have contributed articles to both works. To many who were repelled by the size and cost of the former "System" we believe that Dr. Gibson's work will be a great boon, representing as it does the best aspects of British medicine; progressive, but yet cautious—endeavouring to prove all things rather than searching for novelties merely for novelty's sake.

The articles, as a rule, are up to a very high standard of excellence. After a preliminary discussion on general ætiological and pathological problems, mainly from the pen of the late Dr. Kanthack, whose lamented death



occurred before the chapter was quite completed, the various groups of diseases are taken up. In Volume I.—General Diseases, Diseases caused by Animal Parasites and by Chemical Substances, and Diseases of the Alimentary System. In the section on Fevers, we are glad to see the Dublin School of Medicine represented by Sir John W. Moore, who contributes articles on small-pox, chicken-pox, measles, scarlatina, rubella, mumps, whooping-cough, and influenza. Most of these chapters, as is the case also with others in the book, are illustrated by a number of excellently chosen temperature charts. Dr. Patrick Manson writes on tropical diseases. To him, also, has been assigned the section on animal parasites—a section which is admirably written and no less admirably illustrated. In the second volume the editor, Dr. Gibson, writes on diseases of the endocardium. Dr. Allan Jamieson is the author of the section on the diseases of the integumentary system. As a rule, we are opposed to the inclusion of a chapter on skin diseases in a work on medicine, as such chapters are usually incomplete, and of small worth. Dr. Jamieson's treatise (for it runs to 124 pages) is no incomplete sketch; it contains an excellent account of the present state of dermatology, which will well repay reference. The final section on the nervous system comprises 375 pages. It is illustrated by a good many excellent diagrams, and its high standard of excellence may be inferred from the fact that among the contributors' names we note those of such authorities as Sir W. Gowers, James Taylor, F. W. Mott, and J. Risien Russell.

The work is not suitable for students; for examination purposes it is too large: but to the practitioner who needs a work of reference on Medicine, complete, yet not unduly long or diffuse, we can confidently recommend Dr. Gibson's text-book.

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*Transactions of the Clinical Society of London.* Vol. XXXIII. London: Longmans, Green & Co.

THIS volume of the Transactions of the Clinical Society shows evidence of vitality and of good work on the part

of the Society. The volume contains many interesting papers. We can refer to only a few. Mr. A. E. Barker contributes a valuable article on the Operative Treatment of Perforated Gastric Ulcer, based on twelve cases which he had treated. He calls attention to the need of carefully cleansing the subphrenic spaces. In one of his cases a subphrenic abscess developed, probably as the result of insufficient cleansing. The paper is elucidated by a tabular statement, giving important particulars, and will repay study. In one of his successful cases eighteen hours elapsed between perforation and operation. Mr. J. Hutchinson, jun., has a careful paper on the Primary Resection of Gangrenous Small Intestine during Herniotomy, in which he discusses the merits of the various modes of uniting the cut ends of intestine. Messrs. Jones and Tubby make a report on Ninety-nine Cases of Angular Deformity from Pott's Disease, treated by Manual Rectification (forced straightening), illustrated by a number of photographs and diagrams. Dr. Pitt records an interesting case of rapidly fatal Hæmo-pneumothorax, and writes a valuable paper on the Collection of Blood in the Pleural Cavity.

There are many other valuable papers; we cannot refer to all. The book is excellently illustrated.

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*How to Examine the Chest: A Practical Guide for the Use of Students.* By SAMUEL WEST, M.D., Oxon., F.R.C.P.; Assistant Physician to St. Bartholomew's Hospital; Senior Physician to the Royal Free Hospital, &c. Third Edition. London: J. & A. Churchill. 1901. Pp. 206.

WE are very pleased to welcome the third edition of this well-known and very useful students' manual. It has not been much enlarged in this edition, and thus has escaped the fate which has befallen not a few books intended for medical students—viz., the fate of being enlarged and improved until they become useless for the purpose for which they were intended. On the contrary, we can most warmly recommend Dr. West's little book to all junior

students. They could not obtain any better guide to assist them at the commencement of their hospital studies.

We are convinced that most students would derive much more value than they do from their first year at hospital if they would study some such work as that before us.

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*The Fundamental Data of Modern Pathology: History, Criticisms, Comparisons, Applications.* By DR. ACHILLE MONTI, Professor of Pathological Anatomy, University of Pavia. Translated by T. T. EYRE, M.R.C.P., &c. London: New Sydenham Society. 1901. Pp. 266.

THIS work is an essay on the effects produced by the abnormal proliferation of cells and by the pathogenic microbes, to which the prize at the Fondazione Cagnola competition was awarded by the Royal Lombard Institute. In it many of the most important doctrines of pathology are very carefully discussed—such as the origin of tumours, infection and immunity, the nature of the effects produced by microbes. Many authorities are quoted. The essay will be found valuable by those who are engaged in pathological work. The translator has done his work very satisfactorily.

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*Glasgow Hospital Reports.* Vol. III. With 53 Illustrations. Glasgow: J. MacLehose & Sons. 1901. Pp. 499.

THIS work is not quite on the same lines as most of the annual reports of societies with which we are familiar. They consist of a number of more or less short papers. This volume contains a much smaller number of papers, each of which is in itself an essay of considerable importance. Many of these essays are statistical in nature. Thus we have articles on Maternity Hospital Statistics, on Eclampsia, on Empyemata in Childhood, on the Treatment of Tubercular Disease in the Surgical Wards of General Hospitals, on Acute Pneumonia, in all of which an important feature consists of the tables they contain. Dr. Webster contributes a very careful paper on Cardiac

Arrhythmia, illustrated by many sphygmographic tracings. Drs. Sutherland and Edington have illustrated a number of Malformations of the Kidney. Dr. M. T. Ross records a number of cases of Hemiplegia, and very carefully describes the sensory phenomena observed in them. Dr. J. Adam writes on Asthma. He has found considerable benefit from nasal treatment; in a paroxysm, if the mucous membrane over the turbinals be injected and turgid, he paints it first with a 5 per cent. solution of cocaine, and then with a solution of supra-renal gland extract.

The work, taken as a whole, cannot fail to be suggestive and instructive to its readers.

1. *System of Physiologic Therapeutics*. Edited by S. S. COHEN, M.D. Vol. III. *Climatology, Health Resorts, Mineral Springs*. By F. P. WEBER, M.D., and GUY HINSDALE, M.D. London: Rebman, Limited. 1901. Pp. 336.

THIS nicely brought out volume contains a large amount of well-printed and well-illustrated matter, ending with 22 pages of a well-constructed index. Its subject is, however, too vast for its pages, and many of the names in the index are merely mentioned in the text. Thus, such a paragraph as "WENGEN, the HOTEL JUNGFRAU, on the WENGERN ALP, the HOTEL BELLEVUE, on the LITTLE SCHEIDEGG, ISENFLUH (3,600 feet) above ZWEILÜTSCHINNE, ROSENLAUI, ENGSTLEALP, and the AXALP, above Giessbach, are other summer resorts of the Oberland," is responsible for nine entries in the index, which are not elsewhere mentioned. Curiously enough, Oberland has no place in the index.

Ireland's seaside resorts get four pages, its inland resorts two-thirds of a page—a curious disparity, somewhat accounted for by Dundrum, Enniskerry, Blarney, and the Lakes of Killarney being fitted into the seaside portion.

Part I., dealing with such subjects as elements of climate and classification of climates, is well done, and

the maps help to make it clear. Part II.—description of health resorts—is too sketchy to be of much value.

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*Use-Inheritance, Illustrated by the Direction of Hair on the Bodies of Animals.* By WALTER KIDD, M.D., F.Z.S. London: A. & C. Black. 1901. Pp. 47.

THE author, after a careful and well-illustrated description of the radiating whorls so frequently seen on the hairy coats of mammals, and of the slope of hair at certain selected regions of the bodies of man and of other animals, shows how the underlying muscles, and their use, as determined by the habits of the animal, regulate the direction of the hair. Three alternatives are given—that this arrangement occurred by original arrangement in large groups of animals, that they are adaptive modifications, or that they are inherited modifications, produced by use or habit. The author inclines to the last, in spite of its not agreeing with “Weismannism.”

It is a relief to find a reaction against the literal and absolute acceptance of Weismann’s useful generalisation, and the author deserves credit for his careful collation of easily-observed phenomena, and for the self-restraint that marks his deductions.

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*The Middlesex Hospital, W. Report of the Medical, Surgical, and Pathological Registrars for the Year 1899.* London: H. K. Lewis. 1900.

WE have but one fault to find with the Reports of the Middlesex Hospital—its thin paper back. If the Reports were of ephemeral interest such a cover would be excusable; but, on the contrary, the Reports are models of their kind and a rich storehouse of information. Why not bind them in stiff cardboard?

The abstracts of cases are just what the medical practitioner wants—clear, brief clinical pictures. We always read them with pleasure and try to keep the Reports, but the flimsy, poor cover, as a rule, gets torn, and it needs all our vigilance to keep the volume from destruction. We

hope some time or other to find this much-to-be-desired change.

Of the present Report we can say that we derived much pleasure and a great deal of useful information from the abstracts of cases, both medical and surgical.

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*Transactions of the Grant College Medical Society, Bombay.* From January, 1900, to January, 1901. Bombay: Samachar Press. 1901.

THIS Medical Society is doing a great deal of good work, as its "Transactions" bear witness. Its membership is increasing, and its financial condition is sound. There is a large field for observation in this great Presidency—endemic diseases of the tropics; epidemics from overcrowding; native drugs; and native remedies all call for notice.

The papers in the present issue of the "Transactions" include such subjects as corelysis, hydrophobia, the use of atropin for the treatment of cholera, acute and chronic rhinitis, clinical pictures of plague cases, and scurvy in children. This last paper was highly interesting, as showing how an inferior quality of rice supplied to an orphanage caused an outbreak of scurvy, which, from its severity, closely resembled beri-beri. A return to wholesome food and a little care restored the children to health. We hope in the future to find that the Society will undertake original investigations in tropical diseases—a study too much neglected.

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*A Handbook of Diseases of the Nose and Pharynx.* By JAMES B. BALL, M.D., Lond. Fourth Edition. Crown 8vo. London: Baillière, Tindall & Cox. 1901. Pp. xii. and 439.

IN reviewing a book which has reached its fourth edition little need be said about its scope and arrangement. English medical literature is particularly weak in works on nasal affections, and this volume fills a much-needed place. With regard to its contents, the chapters on anatomy and

physiology are good, and the portion of the work devoted to the accessory sinuses is concise and practical, following the lead of Hajek, and putting the diagnosis on a firm anatomical basis, and leaving out the old-fashioned and highly imaginative methods of differentiation in sinus affections.

The plural of the word meatus is rendered "meatuses," which, as the author remarks, is at any rate English, and is a distinct improvement on "meati," often used as the plural, which is neither Latin nor English. A glance at Fig. 41 will at once reveal a mistake, which renders the diagram quite misleading. Grünwald's cutting forceps are shown applied to the middle turbinal in such a manner that the shaft would pass through the nasal bones, and a procedure for removal of that body is made to appear easy, whereas it is very difficult to perform, in the manner described, through the normal opening.

The price of the book is extremely moderate, and the work can be thoroughly recommended to those in need of a text-book on nasal diseases.

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*Outlines of Gynæcological Pathology and Morbid Anatomy.* By C. HUBERT ROBERTS, M.D., Lond.; F.R.C.S., Eng.; M.R.C.P.; Physician to the Samaritan Free Hospital for Women; Physician to Out-patients Queen Charlotte's Lying-in Hospital; late Demonstrator of Midwifery and Diseases of Women St. Bartholomew's Hospital. With 151 Illustrations. 8vo. London: J. & A. Churchill. 1901. Pp. xxii. and 332.

WE cordially welcome a work which deals with the subject of gynæcological pathology. The latter is a most important branch of gynæcology, and one which, we regret to say, has in these countries been somewhat neglected. Up to within the last few years, the only information on the subject was to be found in a few scattered remarks in gynæcological text-books, and in a short chapter on genital diseases in works on general pathology. Accordingly, there should be a wide field before Dr. Roberts' work.

We wish, however, that Dr. Roberts appeared before us

more in the light of an original investigator—an impossible position we know for a practising gynæcologist to assume—and less in the light of a thick and thin supporter of the theories to which he has been brought up. His work is an admirable one in many respects, but in places it suffers materially from the cramping effects of the teaching of an old and well-rooted school of London opinion. When he discusses subjects which are in advance of that school, Dr. Roberts' opinions and teaching are free and wide, but when dealing with what may be termed hereditary moot-points, his opinion is trammelled by the teaching he follows. There are two bogies which ever appear to stand before the school to which we have alluded, and their names are "minor uterine displacements" and "the obstructive theory of dysmenorrhœa." These evil spirits have haunted Dr. Roberts, we fear, to too good—or we should say to too bad—purpose, and consequently when he is discussing these subjects he furnishes his readers with but poor reading and no information. Every rule—written or unwritten—that should govern his mode of laying his case before his readers is forgotten, and the result is that terms are left undefined, the main question is begged, inconsequential sentences follow one another, and the obvious bearing which the facts he admits have upon the facts he does not admit is left entirely unnoticed.

This is, of course, an easy thing to write, but is there any ground for it? Let us judge from his remarks on minor displacements of the uterus. There is no attempt made to define the terms flexion and version; nay, more, they are apparently considered to be interchangeable—"Anteflexion is the normal position of every uterus in all women. . . . A full bladder may interfere with this natural position of anteversion." Again, in discussing the question as to the importance of retroversions, the author says:—"Another kind of case exists frequently where the uterus is found retroverted and somewhat enlarged, and where the appendages are prolapsed and tender, the latter causing at times great suffering or interference with the bladder and rectum. Here it is not so



much the mere position of the uterus which is important as the descent of the appendages. . . . in these cases the uterus is bulky, heavy, and bleeds easily." Is not this begging the question? It is quite true that the pain originates in the prolapsed ovaries. But what made the ovaries prolapse? Again, it is admitted that the uterus is bulky, heavy, and bleeds easily in these cases, but no attempt is made to explain the occurrence of these phenomena. What is this but neglecting the obvious meaning of the facts he admits? Are the prolapsed ovaries responsible for the uterine displacement, and has the fact that the reposition of the uterus causes the symptoms to disappear no bearing on the case? The strongest supporter of the pathological importance of backward displacements of the uterus could hardly pen a paragraph more pregnant with support for his opinions than is Dr. Roberts' paragraph against their pathological importance—if we read between the lines. Backward displacements are said to be stages of descent of the womb; to be associated with prolapsed appendages, great suffering or interference with the bladder and rectum, and with a bulky, heavy, and bleeding uterus; and yet we learn that they are *per se* of no importance.

The same apparent oblivion to the connection of facts is shown in the sections on "spasmodic dysmenorrhœa," but space forbids us to write further on these points. We can only repeat that the rest of Dr. Roberts' work makes us wish that he had approached the subjects to which we have referred with an open mind.

The chapters on tumours of the uterus and the ovary are excellent, and are particularly well illustrated. In the latter connection, it seems to us to be a matter for considerable congratulation that our large British publishers have at last come to recognise the importance of well and artistically drawn illustrations, and of photographic reproductions. Heretofore, we have been entirely dependent on American publishers for illustrated works.

In conclusion, we beg to express the hope that Dr. Roberts will not think too hardly of our friendly criticism of points which, though they loom large in our review,

are small in his book. It is because they are matters so intimately connected with the everyday work of a gynaecologist, that we have chosen to criticise them at length. Also, perhaps, if we may say it, because we consider that the school of British gynaecologists which hold the doctrines to which we have taken exception should really consider that it is time to revise them, or else to adduce some more logical facts in their support. That Dr. Roberts is unable to do so is a matter which no one could consider as detracting from his ability as a gynaecologist or his power as a writer.

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*The Pharmacopœia of the Hospital for Diseases of the Throat, Nose, and Ear*, Golden-square, London.  
Edited by H. LAMBERT LACK, M.D., and CHARLES A. PARKER, F.R.C.S. London: J. & A. Churchill. 1901.

A LIST of formulæ used at so celebrated a hospital as the above is of great use to all practitioners, but more especially to those who have the responsibility of the throat department at a hospital, as giving them a guide as to the range of therapeutic agents usually employed.

The book has now reached its sixth edition, and is most complete in every way—a fact which may be easily understood when it is mentioned that the doses are given both in our old system of grains, &c., and in the metric, which shows a distinct advance on other hospital pharmacopœias.

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*Water and Water Supplies.* By JOHN C. THRESH, D.Sc. (London), M.D. (Victoria), D.P.H. (Cambridge); Medical Officer of Health to the Essex County Council. Third Edition, revised and enlarged. London: Rebman. 1901. 8vo. Pp. 527.

DR. THRESH is to be congratulated on the demand for a third edition of his excellent treatise, which has been adopted by Medical Officers of Health and Waterworks Engineers in all parts of the Empire as a standard textbook on the important subject of which it treats.

The author has revised his work throughout, and brought

it up to date. Chapters have been added on the protection of water supplies. We have sought in vain through the book for any description of, or even allusion to, the Dublin water supply, of which all Irishmen may well be proud. Nor is there any mention of the gigantic scheme by which it is proposed to carry water from the recesses of the Mourne Mountains to the far-off City of Belfast. Surely this complete ignoring of Ireland, the birth-place of Diplomas in State Medicine or Public Health, is to be deprecated in a work written by an "Honorary Diplomat in Public Health, Royal Colleges of Physicians and Surgeons, Ireland," as the author is apparently proud to describe himself on the title-page.

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*Kitchen Physic, at Hand for the Doctor and Helpful for Homely Cures.* By W. T. FERNIE, M.D.; Author of "Herbal Simples," "Animal Simples," "Botanical Outlines," &c., &c. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1901.

FOR a delightful, gossipy book, somewhat after the style of the *Arcana Fairfaxianæ*, full of erudition as Burton's "Anatomy of Melancholy," and as pleasant to read as Pepy's "Diary," we recommend Dr. Fernie's "Kitchen Physic."

We, however, think the author was at his best in "Herbal Simples." Withal the present book is rich in examples of the fulness of knowledge from which it is written; but the contents are not fused into one harmonious whole as they are in the earlier books.

We have no wish to be hypercritical with this charming book, for which the literature of the culinary art, as it affects health, has been laid under tribute from the time of Jacob's cruel deception of his blind father to the present. Not the least of its many charms are its folk-lore stories of kitchen physic.

Many hours' enjoyment are to be had from Dr. Fernie's "Kitchen Physic," and not infrequently some useful hints in dietetics.

# PART III.

## MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

### ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

#### SECTION OF SURGERY.

President—THOMAS MYLES, M.D., F.R.C.S.I.  
Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

*Friday, November 8, 1901.*

THE PRESIDENT in the Chair.

#### *Presidential Address.*

THE PRESIDENT took for his subject the advantages of operative interference in complicated fractures of the long bones, as practised by Mr. Arbuthnot Lane in London. He compared the surgical audacity of operative measures on the abdominal contents, and the timidity which surgeons exhibited in the more accessible regions of the upper and lower extremities in cases of fracture. The older classifications of fractures were, he considered, too artificial to be helpful, and were, to the beginner, stumbling-blocks to diagnosis. Cases of fracture complicated with dislocation were difficult of diagnosis, and where, as was sometimes the case, calcareous deposits formed, the Röntgen rays gave little aid. He met one such case in which a fracture of the anatomical neck of the humerus was complicated with dislocation of the head of the bone, and the deposition of a large calcareous mass which extended up to the clavicular articulation. All the classic symptoms of separation of the greater tuberosity were present, and the pathological condition

was made known only by raising the deltoid muscle. In such doubtful cases he recommends that the deltoid be separated from its brachial insertion, and the part exposed so that the lesion may be recognised. The operation presents no difficulties, is quickly performed, and is comparatively free from risk.

*Laparotomy for Intestinal Obstruction.*

MR. LENTAIGNE read a paper on a case in which laparotomy had been twice performed, with six months interval, for the relief of intestinal obstruction, resulting from the presence of large concretions in the colon. The patient, a boy commencing his teens, had been addicted to chewing woollen fabrics, blankets, and such like, and when admitted to hospital was suffering from constipation and vomiting, which daily became worse. For a week he got injections through an O'Beirne's tube, which were unattended with any good results. An operation was performed. The abdomen was opened, a large concretion was removed from the colon, and the boy made a good recovery. Six months afterwards he was again admitted to hospital, and again after a fair trial of injections a laparotomy was performed and the colon opened and evacuated, in the performance of which the old silk continuous sutures of the previous operation were met with and found to have remained unimpaired. An attempt was made to create a fistula in order to prevent the recurrence of the condition. The fistula, however, closed, and the boy, now convalescent, left hospital, to return some time afterwards with the same symptoms—vomiting and constipation. A finger in the rectum now detected a large concretion, which was in part scooped out and washed out. The boy made a good recovery; he has discontinued the pernicious habit, and remains well.

THE PRESIDENT considered the paper very instructive, as showing the difficulty of diagnosing abdominal tumours, and said that in a somewhat similar case he had seen good results obtained from olive oil injections, followed by the use of electricity, which produced free vomiting and purging.

MR. CROLY thought palliative treatment by injections might have been given a more extended trial before resorting to colotomy. He thought the second operation unnecessary, and there was nothing to indicate that it had been advantageous.

MR. MCARDLE quite agreed with Mr. Lentaigne in the necessity for early operation in such cases; nothing was gained by delay

and it was sound surgery to operate and remove the concretion from above. He was particularly pleased with the fulness of detail with which the paper was presented.

MR. MITCHELL (Belfast) congratulated the author of the paper on finding a hypertrophied colon. In one of his cases the colon was so much attenuated that the tissue could not hold the sutures, the wound opened, and the boy died.

MR. ORMSBY gave an instance of a patient of his who ate her hair, nibbling off portions until she produced a mass of matted hair in her stomach, which he excised.

MR. DOYLE drew attention to the tendency of alimentary concretions to simulate malignant disease of the bladder. A patient of his, treated for malignant growth of the bladder, was found after death to have a healthy bladder, the trouble having been caused by an immense accumulation of charcoal in the rectum and descending colon.

MR. CHANCE instanced the case of a boy, who, from eating straw, formed a mass in his ileum about the size of a banana, which necessitated operation.

MR. LENTAIGNE, in reply, thought that any further use of palliative remedies would have done away with all prospect of success. The second operation was not attended with any benefit, but having performed it he thought it but right to mention it.

*Exhibits.*

MR. H. GRAY CROLY showed—(a) child, aged 4, showing results of excision of astragalus for tuberculosis; (b) child, aged 7, showing results of excision of astragalus and end of fibula, with gouging of os calcis for tuberculosis; and (c) the astragali removed from three patients.

MR. F. H. TAYLOR showed (a) patient in whom the so-called excision of the superior maxilla has recently been performed for sarcomatous disease; (b) cases showing the result of operation for complete cleft of the hard and soft palate (own operation); (c) case presenting extensive varicosity of the veins of the right upper extremity. He also exhibited (a) parts removed in the operation of supra-pubic prostatectomy; (b) kidney removed for calculous disease; (c) sarcoma of superior maxilla; (d) comminuted fracture of the atlas vertebra, the result of a fall.

The meeting then adjourned.

*Friday, December 6, 1901.*

The PRESIDENT in the Chair.

*Living Exhibits.*

THE following clinical cases were shown :—

MR. D. KENNEDY.—(a) Case of enlarged liver after trauma ;  
(b) two cases showing results of osteotomy for bow leg.

MR. R. L. SWAN.—Case of bilateral radical cure of inguinal hernia with interval of four years between operations.

MR. HENRY CROLY.—Patient operated on for double empyema.

*Exhibits.*

The following card specimens were also shown :—

MR. H. GRAY CROLY.—(a) Stomach lacerated by shaft of dray—cycle accident ; (b) limb removed by amputation at hip-joint for sarcoma.

MR. D. KENNEDY.—(a) Thymus and thyroid glands of child who died under chloroform ; (b) four skiagrams showing foreign body in œsophagus, stone in bladder, congenital absence of radius, and fracture of olecranon.

MR. R. L. SWAN.—(a) Two kidneys and part of hypertrophied ureter removed by ventral incision from patients, aged twenty-three and thirty-five ; (b) comminuted extracapsular fracture from man, aged ninety, who died three days after injury.

MR. HENRY CROLY.—(a) Tumour removed from infrascapular region ; (b) stricture of pylorus ; (c) cystic hygroma.

*Intracranial Hæmorrhage.*

MR. J. S. M'ARDLE read a paper, in the course of which he said that he desired to show how futile was the treatment of intracranial hæmorrhage by applying ice to the head and depressing the feet. It is not so very long ago that he heard such treatment advocated. Brain surgery seems to have been neglected for abdominal surgery, a fact which may in part account for the want of progress made in the former. It is, however, necessary that a great change should come over our theories and procedure in brain surgery ; he had seen patients die from intracranial pressure who should have lived. Tumours of the brain due to microbic tension will afterwards receive more thought. For such cases drugs and applications to relieve intracranial tension are, at their best, only palliatives. He had no belief in the well-known general practice

of applying ice to the head, and the internal administration of mercury. Intracranial over-tension should be treated as one treats over-tension elsewhere, and as illustrative of the value of relieving the tension by operative means he quoted the following cases:—

CASE I.—William Green, aged forty, came under observation in 1890. On November 13th of that year he fell into the hold of a vessel; he cut the forehead over the right eye, and went to Sir P. Dun's Hospital, where it was dressed, and afterwards he went home apparently all right. On the following Monday, three days afterwards, his stomach was sick, and he suffered from a pain in the head. On Tuesday his left leg became powerless; on Wednesday he came under care in St. Vincent's Hospital. The house surgeon reported his temperature as sub-normal; his pulse was slow, but he answered questions quickly and intelligently. The next day the house surgeon reported that the patient had had convulsions: his thumb was flexed on his palm, his hand on his forearm, his forearm on his arm, and his arms were raised. That evening the skull over the point of injury was trepanned, and a clot the size of a sixpence was come on, which was surrounded by a greenish effusion. Immediately after the operation the patient showed signs of improvement, and in fourteen days was going about.

CASE II.—A boy, aged sixteen, got a kick of a horse on the forehead, and he became unconscious. Whilst in this state the boy's wound was dressed; after a little his consciousness was restored to be again lost; then he came to St Vincent's Hospital. On admission his breathing was laboured; his pulse slow and the site of the wound greatly swollen. The skull was trepanned over the site of the middle meningeal artery, which was found to have been penetrated by a fine spiculum of bone. He removed the effused blood and some portions of the frontal bone, together with the crista galli of the ethmoid. The effect of the injury on the boy's temper was peculiar. Prior to the injury he was of a good temper, afterwards he became a devil, but has gradually become his old self.

CASE III.—A boy fell, striking his head on a metal step. He got up, walked home, and came into dinner; whilst at the table he got drowsy, vomited, and in a few days got epileptic fits. The parents of the boy thought his case hopeless. It was noticed that just before a convulsion the eyes deflected. Trepanned over the fissure of Rolando, giving exit to two grammes of fluid. The boy made an uninterrupted recovery.



CASE IV.—A boy, playing on a pile of boxes, fell. The case was an aggravated one, and the parents were hopeless. The father said, "Do what you like with him; anything is better than his present state." The boy complained of a curious series of phenomena of the visual sense. He had a single ring of fire, then a flash, then he knew no more. Trepanned over the fissure of Rolando, and found nothing until the auriform lobe was probed, when exit was given to a small quantity of fluid.

CASE V.—A boy, riding down the Phoenix Park on a bicycle, fell, coming down on his cycle. His wound was dressed at Steevens' Hospital, and he felt so well that he walked home. He gradually, however, lost the power of his right limbs, and when he came under notice was trepanned over the posterior branch of the middle meningeal artery. An extra-dural hæmorrhage was come down on, which spread backwards and downwards, making its way into the middle cranial fossa, from which it was scraped out. The case progressed to convalescence without one unfavourable symptom.

CASE VI.—A man riding a race fell, and the horse coming after hit him with the cock of his shoe. He never lost consciousness and was driven home, a distance of seven miles, on a car. He was trepanned, and a blood-clot about an ounce in weight was removed. He was practically well when, on the thirteenth day after the operation, he became thirsty and got dissatisfied with short drinks of water. At 7 a.m. he got a tumbler of water, which he drank off and soon afterwards died. The cause of death was septic infection, the source of which could not be found out. Some months afterwards the mystery was solved by the confession of a friend of the patient that on the day of the accident he had probed the wound with his finger—a curiosity that cost a valuable life.

THE PRESIDENT thought it might safely be said that no surgeon hesitates, when necessary, to raise or remove portions of the cranial bones. Where they were now assembled excellent papers on cranial surgery for cerebral effusive pressure effects and operation on the sinuses had been read; indeed the "Transactions" of the Academy are rich in such. It is open to question if the symptoms in a case are wholly due to intracranial tension or injury to cerebral tissue. Withal it seems that death is usually due to intracranial tension rather than to cerebral injury. To trepan the skull, examine the ventricles, and tap them seems easy, but the

case is not so simple when the injury results from some underlying condition of the kidney, such as Bright's disease, atheroma of the arteries, or syphilis. Some cases recover after many hours, or even days, without any operative interference; nevertheless they must acknowledge that all the drugs of the Pharmacopœia will not relieve intracranial tension. He had a case of a man who fell from a two-story window; when seen he was quite unconscious, and there was no indication other than the unconsciousness of the accident. It occurred to him that an X-ray photograph would assist them; and it did, for it revealed a whole series of cranial fractures. He trepanned in three places, removed a large clot, and the patient became conscious. In a case of Jacksonian epilepsy he operated, and the patient remained well for a time, but has had one fit since.

MR. SWAN remarked that Mr. M'Ardle's paper had opened for them a new line of thought as to the conditions that produce cerebral tension. From the title of the paper he thought it would have dealt with other than traumatic cases. Most persons could have acted, in similar cases, as Mr. M'Ardle did. The great difficulty in cases of intracranial tension is to locate the injury; when there is a depressed fracture the difficulty of diagnosis does not exist. A girl, who fell off a merry-go-round, came under his care with a depressed fracture of the skull. Her head was retracted; she had epileptic convulsions. He trepanned, raised the depressed portion of bone, and the girl got well, and remained so for six months; then the fits recurred. Shock appears to have the power of interrupting the sequence of the Jacksonian epileptic fits.

DR. POLLOCK said that severe cases might recover without any operative interference was known to all of them, but the following case so well illustrated this that he thought it worth recording. An Australian gentleman, when riding over his farm, met with an accident. His horse fell, throwing him, and there he lay for two hours unconscious; when he came to he found the horse lying on top of him; he used his spurs on the animal, which caused it to rise. Then he succeeded in getting on his feet, mounted the horse, and rode home, a journey of nine miles. When he reached home he became again unconscious, and remained unconscious for three weeks. There was no medical advice obtainable in the district, and advice was procured by telegraph from Sydney, two hundred miles away. After consciousness returned

he had from five to ten epileptic fits daily. He went by rail to Sydney, from Sydney to London; on the journey home he never had a fit. After some time at home, finding he was free from fits, he rejoined his militia regiment, and being an excellent judge of horses he was offered a good appointment by the Government in South Africa, where he now is, and has remained free from fits since he left Sydney.

MR. H. GRAY CROLY said that when he filled the Presidential Chair of the College he had read a paper on injuries of the head, and advocated then and now prompt surgical intervention. Some years ago he was called to see a man who fell on some spiked railings, getting a punctured fracture of the skull. On his arrival he found the patient aphasic and in the hands of physicians, who, five of them, were dosing the poor man with bromides and iodides, and refused to sanction trepanning. The gentleman left the country and went to the United States to be trepanned, and from there went to Paris, where the piece of broken bone came away before the surgeons could operate, and now he is quite well. In the case of a boy who was kicked by a mule, he raised the fractured portions of the cranial bones, and came on a large blood-clot lying on the dura mater. When it was removed the boy regained consciousness, and in a short time was quite well. The difficulty in all these cases is to find the locus of tension. He had seen alarming hæmorrhage from the ear without any sign of external injury. A man was brought to him with the history of having fallen on the back of his head; he answered in monosyllables and gradually became unconscious. Prior to death he had 250 convulsions. The autopsy revealed a broken occipital bone, with a blood-clot that covered the cerebellum. Where were you, in such a case, to apply the trephine?

MR. TOBIN had the advantage of having seen almost all Mr. M'Ardle's cases, but one must not expect the same progress in cranial and cerebral surgery as in abdominal. In the latter, one can see and handle all the viscera, but the skull opening is so small that but a limited view could be obtained of the cavity and its contents. All surgeons trepan in cases of compound fracture. But he considered that a fracture associated with soft tissues necrosed from pressure is quite as dangerous as the compound, and necessitates equal care in dressing. To another point he would call attention by an illustrative case:—A sergeant put a revolver to his head and produced a compound fracture; the wound never

properly healed, the patient got epileptic fits, and a small projecting spiculum of bone was then removed. All this time there appeared no evidence of tension. The patient was placed on his side with the trepanned bone on the pillow, and during the following night there was a profuse flow of serum, after which the man made an uninterrupted recovery. There seems a dread of putting a patient on the trepanned side, which he considers is the most suitable one to allow of free exit for any fluid present.

DR. COX remarked that he was a believer in surgery, and advocated it in such cases as those referred to. He once trepanned a patient in a provincial infirmary, and removed a portion of a reaping hook from the brain of a western peasant. He also recommended trepanning of the mastoid in a case which he was consulted in ; his advice was not followed. Afterwards the patient was twice trepanned, but not at the locus of the pus ; finally he died. He held that cases of kidney disease or of disease of vessels are not amenable to surgical interference.

MR. LENTAIGNE said Mr. M'Ardle's paper alluded to the treatment of intracranial hæmorrhage some time after it had occurred. It may so happen that the surgeon is called in when bleeding is actually taking place from a small opening in the vessel. Mr. Victor Horsley in such cases recommends ligature of the carotid. A case of his was of this nature. The patient, a lady, had convulsions of the right leg and right arm. He made pressure on the left carotid : the convulsions ceased in the leg and arm, and the patient was able to move the leg up and down. The pressure was now discontinued, and soon afterwards she got difficulty of speech and paralysis of the limbs of the right side. By the aid of assistants pressure was now kept up for some time, and the patient recovered to a great extent the use of speech and the power of her limbs.

DR. MORE O'FERRALL would like to ask Mr. M'Ardle on the use of trepanning in intracranial tension in tuberculous meningitis, where day by day the tension increases. If we could operate there might for such cases be a chance of life. Even to open the abdomen in peritoneal tuberculosis benefits. Might it not be equally useful in tuberculous meningitis ?

MR. M'ARDLE, in reply, said that on a future occasion he proposed treating of operative measures in intracranial tension of non-traumatic origin.

The Section then adjourned.

## SECTION OF MEDICINE.

President—SIR CHRISTOPHER J. NIXON, M.D., P.R.C.P.I.

Sectional Secretary—R. TRAVERS SMITH, M.D.

*Friday, November 15, 1901.*

JAMES LITTLE, M.D., in the Chair.

*Dermatitis Gangrænosa.*

DR. FINNY read a paper on this affection. It was published in the number of this Journal for December, 1901 (Vol. CXII., page 401).

DR. WALLACE BEATTY never met with an identical case to the one described, though he met with a curious form of impetigo, in which the pustules were, though discrete, close. They were unhealthy looking, exuded a glairy secretion, and had a dark base. In a case of injury to the hand a rash resembling impetigo appeared, and was followed by ulceration.

DR. CHARLES MOORE stated that several years ago a number of such cases as those described by Dr. Finny had been treated in Cork-street fever hospital. From the appearance of the gangrenous sore they were called "burnt holes."

DR. WALTER SMITH looks upon gangrene as a much less common occurrence than reasonably might be expected. Gangrene occurs under so many conditions—mechanical, thermal, and so forth. Mere arterial constriction is not sufficient to account for gangrene following the use of ergot. It is due to poisons from within, and poisons from without falling on suitable soil, hence the occurrence of gangrene in diabetic patients, hospital gangrene, acute gangrene in nervous diseases, acute bedsores of Charcot in hemiplegia, more common in left side hemiplegia, in syringomyelia. The ætiology of necrosis is as yet imperfectly understood.

DR. L. SYMES, whilst acting as registrar to Sir Thomas Barlow, saw two cases similar to that described; they occurred in girls between six and seven years of age. The ulcers gave out a thick, viscid, glycerine-like discharge. One case that died was tuberculous.

DR. McWEENEY found, some two years ago when making an autopsy on a patient who had died of typhoid, some of the gangrenous holes they had heard of, there were some half-dozen of the "burnt holes." He examined them, sectioned them, and made some cultivations, of which, on a future occasion, he hoped to

detail the results to the Academy. On the surface of the skin he found numerous cocci, but these cocci had nothing to do with the ulcer, which was due to a minute bacillus in the deeper tissue, which, by cultivation, gave a similar bacillus like to that of *can-crurum oris*. He did not notice any bullæ on the subject he examined.

SIR JOHN W. MOORE said the case he embodied in his work on Continued Fevers was not due to varicella gangrænosa. He believed that the ætiology of the affection was to be found in bacterial thrombosis.

DR. BURGESS, who had known the patient of the late Sir W. Stokes, said there were two gluteal ulcers of large size, like to the cavity of a carbuncle.

DR. KNOTT drew attention to the frequency of "burnt holes" during the famine years. He looked upon the disease as closely related to "noma." The inflammation of the eyes in Dr. Finny's case he considered to be the outcome of nutritional changes.

DR. JAMES LITTLE thought that all the cases to which reference had been made could not be included under the same class as that of Dr. Finny's patient. The case was an extremely rare one, and he was sure they all felt grateful to Dr. Finny for bringing it before them. Some of them told of recoveries, but he thought it was too much to expect recovery in such a tuberculous patient.

DR. FINNY replied.

#### *Paranoia Hallucinatoria.*

DR. CONOLLY NORMAN reported a case of this condition.

DR. DAWSON desired to hear from Dr. Norman if the hearing was lost before or after the auditory hallucinations commenced. The delusive interpretations of the senses was one of the most frequent phenomena of insanity. One of his patients, hearing a railway whistle, answered as if the sound were a voice. Dr. Norman's case was peculiarly interesting from the number of special senses implicated, and the fact that the auditory hallucinations were unilateral. In a case of early general paralysis in a patient he examined the delusive interpretation of the visual sense was well marked. At first, as the cornea became clouded, the patient saw moss, finally devils, monkeys, and ultimately declared that a hospital had been built at the back of his eyes to blind him.

DR. WALTER SMITH would like to know if auditory hallucinations were not the most commonly met with. Special sense hallucinations following the toxic action of certain drugs are deeply

interesting in this connection ; the visual hallucinations of acute alcoholism, and the auditory hallucinations that occur so early in cocaine poisoning, are examples known to all.

DR. BEWLEY, referring to auditory hallucinations, told of a deaf patient who heard voices upbraiding him for crimes committed in youth. Ignorance is a fruitful source of misinterpretation. Children are afraid of darkness. The insane hallucinations often arise from attempts to interpret sounds that the sane ignore.

DR. NORMAN replied, and the Section then adjourned.

### SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D., F.R.C.P.I.

Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

*Friday, November 22, 1901.*

THE PRESIDENT in the Chair.

#### *Specimens.*

THE PRESIDENT :—Two specimens of fibromyomata.

DR. ALFRED SMITH :—Three interesting fibromyomata.

DR. JELLETT :—Uterus and appendages removed for chronic salpingo-oophoritis.

DR. PUREFOY :—(a) Three distinct ovarian tumours removed in one laparotomy ; (b) tube containing tubal mole, which lay in front of uterus ; (c) ruptured tube and ovum belonging thereto ; decidua passed by same patient four days after rupture ; (e) ovarian cyst and hydrosalpinx ; (f) double hæmatosalpinx.

#### *Suppurating Ovarian Cyst, complicated with a Large Intra-peritoneal Abscess.*

DR. HENRY JELLETT said that the patient to whom his paper referred had been first under the care of Dr. Macan, and subsequently under his own care whilst doing Dr. Macan's hospital duty. The patient, a woman, aged thirty-eight, was admitted to Sir P. Dun's Hospital on July 27th, 1901. She was then in a very critical condition, owing to the presence of a tumour which occupied the lower portion of the abdomen. She had been ill for five weeks, her temperature was 101° F., and her pulse varied from 100 to 120. After a few days' observation, Dr. Macan opened the abdomen, and evacuated a large collection of most foetid pus,

which had accumulated in the peritoneal cavity, among the intestines. The cavity was then washed out and plugged. The existence of a tumour in Douglas's pouch was also determined, but it was not removed owing to the state of the patient making it necessary to shorten the operation as much as possible. The condition of the patient after the operation was very serious, and the discharge which escaped from the cavity was most offensive. She then came under Dr. Jellett's care. Her condition remained serious for some days, and then gradually improved. The cavity was washed out twice daily with sanitas and water (25 per cent.), and the fœtor disappeared. Her temperature fell to normal on August 8th, and the abdominal wound, which had not united, was re-sutured, with partial success. However, on September 1st the condition of the patient again became serious. Her temperature rose, she lost her appetite, and there was extreme difficulty in getting the bowels to move. On examination, a cystic tumour was found in Douglas's pouch, pressing on the rectum. This tumour was removed on September 5th, through an opening made in the posterior vaginal fornix. It proved to be an ovarian cyst containing a most fœtid accumulation of pus. It had apparently no connection save with the right cornu of the uterus. This pedicle was clamped, and the cavity was plugged with sponges wrung out of very hot water on account of the large amount of general oozing from separated adhesions. No sutures were used. The sponges were removed on the next day, and replaced by iodoform gauze. The patient's temperature fell at once, and she steadily and continuously recovered strength. Dr. Jellett drew attention to the effect of hot sponges in immediately checking hæmorrhage, and to the fact that the patient's temperature fell to, and remained at, normal for a long time after the first operation, in spite of the fact that there was a large accumulation of pus in the pelvis.

Dr. MACAN remarked that the woman, whose history they had just heard, was the worst case he ever had in hospital. He determined on laparotomy on her admission; if anything could be done it should be done quickly. The cause of her condition was found to be a fœtid abscess. The fact that the temperature remained normal for seventeen days after it became normal, he considered to be noteworthy; it showed how there may be pus without a rise of temperature. He afterwards thought that he should have drained the abdomen through the vagina, but he



found a firm mass in Douglas's pouch, and the patient was not young enough or well enough for a voyage of discovery. The forceps that broke was "made in Germany," but if you take too weak a forceps, say an intestinal one, to clamp an ovarian tube you can break it, even if made in England.

DR. ALFRED SMITH said one could not estimate the character of the pus from its stench—pus collections in the neighbourhood of the rectum are notoriously ill-smelling. The relief of pain felt after opening an abscess, he thought, is due to the diminution of tension of the abscess sac. Emptying the first abscess relieved tension, pain ceased, and temperature fell. Then the second abscess ripened, became tense, and temperature rose. His favourite antiseptic wash was peroxide of hydrogen, with which he washes the sac until the fluid comes back free from air bubbles.

DR. PUREFOY, Master of the Rotunda Hospital, was of opinion that Dr. Jellett's paper offered several practical points for consideration—there was oozing of blood, which, in such cases, was not without danger. And he could not but think that both the operators, Dr. Jellett and Dr. Macan, lacked courage in not opening into Douglas's pouch from the vagina and emptying the pocket of pus, which afterwards gave so much trouble, necessitating a second operation. Dr. Jellett's report was not consistent; the mass in Douglas's space is in one place referred to as a hard mass, and again spoken of as a collection of pus.

DR. MACAN rose to give a personal explanation. If a normal temperature is followed by a rise, seventeen days after operation it shows that something must have happened.

DR. JELLETT, in reply, said the improvement in the patient after Dr. Macan's operation was only relative. Her temperature fell, her pain ceased for a time, but she could not be got to take food. The mass in Douglas's space had considerably increased between the operations—it was an increase in pus, not a fresh formation. The explanation of Dr. A. Smith of the pain from tension of the sac is probably right.

*Posterior Vaginal Coeliotomy as the operation of Election rather than that by the Anterior Fornix.*

DR. HASTINGS TWEEDY read a paper advocating this view. After incising the vaginal mucous membrane the wound should be enlarged by means of the fingers, which are made to tear an entrance into the peritoneal cavity. The Trendelenberg position is now

added to the ordinary gynæcological position. By this means the pelvic cavity can be well explored by sight, long vaginal extractors being employed to keep the edges of the wound apart. In cases where the vagina is roomy, such an operation is simple, safe, and suitable for the removal of an inflamed foetus, or small tumours situate to the side or behind the uterus. The adoption of Trendelenberg's position will be found a distinct improvement in the technique of the operation by those who have previously not employed it.

DR. MACAN remarked that he was old enough to confess he did not know what Prior's operation is, and was not much enlightened by the paper. Operators had long used both anterior and posterior colpotomy, and Prior did nothing, in his opinion, except the posterior operation with the use of the Trendelenberg position. He did not think the position in such an operation brings the parts well into view—better without it; nor could he understand how the ureters or vessels could come into the way of the operator in posterior colpotomy. He looked upon the removal of plugs as almost always painful unless you wait for the presence of some moisture—a course to be recommended—always supposing there is no rise of temperature. In all such cases the question naturally arises—What route will the surgeon pursue; vaginal or abdominal? In unilateral diseases he preferred the superior operation, as one gets a better view of the condition of the parts. In cases of abscess the vaginal route is, as a rule, preferable, and when tumour is located in Douglas's pouch posterior colpotomy is to be preferred.

DR. PIREFOY did not think that posterior colpotomy is so free from all risks as the paper might lead hearers to think. In two recent cases he had had secondary bleeding. One case occasioned him some anxiety, as the bleeding came on during the night, and he found on his arrival a vessel spouting at the angle of the wounds, on which he had to apply a catch forceps.

DR. ALFRED SMITH was of opinion that with the use of antiseptics opening the peritoneum has been robbed of its terrors, and he uses the abdominal route in all cases, as giving the best view of the parts, and because it is no more liable to shock than the vaginal. The painful process of removing plugging might be avoided if a bag were used, and this bag filled with tampons of small plugs, which could be readily removed without causing pain. He had found the early removal of plugs comparatively painless, and had no bad results from doing so.

DR. JELLETT said the Section had wandered from the subject of Dr. Tweedy's paper, which was a description of Prior's operation to be used in suitable cases. It is obvious, he remarked, that if adhesions were present no tissues fall down, and there is no increased area of view. Prior's operation was useful in cases of purulent bulging.

DR. WILLIAM SMYLY could not understand Dr. Jellett's objection. How can we discuss the operation other than by comparing it with the methods of other operators? An operation very similar to this of Prior's is recommended in cases of hysterectomy for cancer. The Trendelenberg position had the great advantage of allowing of plugging the wound. It may be necessary to allow plugs to remain in a long time. As a whole, he prefers the abdominal route, yet he confessed there are occasions when the vagina is preferable. Our views are modified by time. We are not now so anxious to excise everything. The tendency is to look at patients years after operation, and on their then condition to decide on the benefits or otherwise of the procedure. Years ago he removed a unilateral pyosalpinx, and did it by the abdominal route; he was now able to record that the patient, who went to the country, has been for years quite well, and the mother of a healthy child. In one case he removed the ovaries by the vaginal route, leaving a little of the tubes. Years afterwards the patient had to be again operated on, the remaining portions of the tubes were removed, and the patient is now quite well. Had he selected the abdominal route the second operation would not have been necessary.

DR. TWEEDY, in reply, said that he had brought Prior's operation under notice because it was little known and, in certain conditions, would be found useful.

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#### INTRATRACHEAL INJECTIONS.

"INTRATRACHEAL Injections in Bronchial and Pulmonary Affections." By Willis S. Anderson, M.D. (*Medical News*, New York, Sept., 28th, 1901.) The author prefers olive oil containing menthol 2 to 4 per cent. and liquid guaiacol 1 to 2 per cent.; of this 1 to 2 drams is used at a time. He finds such injections are of advantage in subacute and chronic bronchitis, in bronchiectasis, in pulmonary tuberculosis, relieving many of the symptoms especially due to secondary infection; it quickly relieves the distressing symptoms of asthma.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;  
F.R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.;

## VITAL STATISTICS.

*For four weeks ending Saturday, November 30, 1901.*

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending November 30, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 18·8 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, November 30, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Nov. 9	Nov. 16	Nov. 23	Nov. 30			Nov. 9	Nov. 16	Nov. 23	Nov. 30	
22 Town Districts	18·5	21·1	21·9	18·8	20·1	Lisburn -	22·8	18·2	22·8	22·8	21·6
Armagh -	13·8	34·4	27·6	27·6	35·8	Londonderry	14·4	11·8	26·2	17·0	17·4
Ballymena	14·4	24·0	9·6	28·8	19·2	Lurgan -	17·7	4·4	17·7	8·9	12·2
Belfast -	16·6	19·5	21·5	19·5	19·8	Newry -	12·4	16·6	4·1	8·3	10·4
Clonmel -	10·2	35·8	15·8	15·3	19·2	Newtownards	5·7	17·2	28·6	22·9	18·6
Cork -	16·5	19·2	20·6	23·3	19·9	Portadown -	10·4	20·8	15·6	5·2	13·0
Drogheda -	16·8	36·8	16·3	4·1	18·4	Queenstown	13·2	19·8	26·4	6·6	16·5
Dublin - (Reg. Area)	23·2	23·9	23·8	18·8	22·4	Sligo -	24·0	19·2	33·6	19·2	24·0
Dundalk -	31·9	20·0	31·9	12·0	23·9	Tralee -	15·9	15·9	5·8	5·3	10·6
Galway -	27·2	31·1	23·3	42·8	31·1	Waterford -	13·6	15·6	25·3	5·8	15·1
Kilkenny -	19·9	14·9	29·8	24·8	32·3	Wexford -	9·3	14·0	14·0	9·3	11·7
Limerick -	6·8	23·3	11·0	26·0	16·8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases registered in the 22 districts during the week ended Saturday, November 30, were equal to an annual rate of 1·4 per 1,000—the rates varying from 0·0 in seventeen of the districts to 4·8 in Ballymena. Among the 131 deaths from all causes registered in Belfast are 3 from measles, 4 from whooping-cough, 1 from diphtheria, 2 from ill-defined fever, 3 from enteric fever, and 4 from diarrhoea. The 34 deaths in Cork include 2 from whooping-cough.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, November 30, amounted to 216—114 boys and 102 girls; and the deaths to 141—65 males and 76 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 19·6 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 18·8 per 1,000. During the forty-eight weeks ending with Saturday, November 30, the death-rate averaged 25·7, and was 0·6 under the mean rate for the corresponding portions of the 10 years, 1891–1900, based on the estimated mean population of the Dublin Registration Area as then constituted.

Nine deaths from zymotic diseases were registered during the week, being 5 under the number for the preceding week, and equal to an annual death-rate of 1·3 per 1,000 of the estimated population, the average rate for the 48th week of the past 10 years being 2·9 per 1,000. Four of the 9 deaths were from diarrhoea, 2 were from enteric fever, and 1 each from scarlatina, whooping-cough, and erysipelas.

Tuberculosis caused 27 deaths—namely, 23 from pulmonary

tuberculosis, 1 from tubercular meningitis, and 3 from other forms of tuberculosis.

Diseases of the respiratory system caused 22 deaths, being 13 under the number registered in the preceding week, and equal to an annual rate of 3.1 per 1,000 of the estimated population; the average rate for the 48th week of the preceding 10 years being 7.1. There were 11 deaths from bronchitis, 8 from pneumonia, 2 from pleurisy, and 1 from croup.

The deaths of 4 children from "convulsions" were registered, all being under 5 years of age, of whom 3 were under 1 year old.

Four deaths were due to apoplexy, and 9 to other diseases of the brain and nervous system (exclusive of convulsions).

There were 8 deaths from diseases of the circulatory system and 5 from cancer.

Three accidental deaths were registered.

In 7 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the deaths of 5 children under 5 years of age (including 4 infants under one year old) and the death of a person aged 74 years.

Thirty-six of the persons whose deaths were registered during the week were under 5 years of age (24 being infants under one year, of whom 13 were under one month old) and 42 were aged 60 years and upwards, including 23 persons aged 70 and upwards, of whom 9 were octogenarians, and one (a woman) was stated to have been aged 91 years.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending November 9, 1901 ..	..	77 cases.
.. November 16, ..	..	60 cases.
.. November 23, ..	..	74 cases.
.. November 30, ..	..	82 cases.

Of the 82 cases notified in the week ended November 30, 31 were erysipelas, 20 enteric fever, 23 scarlatina, 6 diphtheria, and 2 measles.

**(2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.**

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending November 9, 1901 .. ..	3 cases.
„ November 16, „ .. ..	3 cases.
„ November 23, „ .. ..	5 cases.
„ November 30, „ .. ..	8 cases.

Of the 8 cases notified in the last week, 6 were scarlet fever, one diphtheria, and one erysipelas.

**(3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.**

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending November 9, 1901 .. ..	2 cases.
„ November 16, „ .. ..	14 cases.
„ November 23, „ .. ..	4 cases.
„ November 30, „ .. ..	12 cases.

Of the 12 cases notified in the last week, 4 were whooping-cough, 3 diphtheria, 2 enteric fever, 2 measles, and one erysipelas.

**(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.**

Twelve cases of enteric fever were admitted to hospital during the week ended Saturday, November 30; 5 patients were discharged, and 74 remained under treatment at the close of the week.

Twenty-eight cases of scarlatina were admitted to hospital, 18 patients were discharged, and 90 remained under treatment at the close of the week. This number is exclusive of 18 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Thirteen diphtheria patients were admitted, 7 were discharged, and 43 remained under treatment at the close of the week.

One case of measles only remained under treatment at the close of the week.

Not a single case of typhus fever was under treatment.

In addition to the above-mentioned zymotic diseases recognised

as such, 5 cases of pneumonia were admitted to hospital, 12 cases were discharged, one died, and 25 cases remained under treatment at the close of the week.

#### STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending November 9, 1901	..	..	111 cases.
„ November 16, „	..	..	97 cases.
„ November 23, „	..	..	64 cases.
„ November 30, „	..	..	85 cases.

Of the 85 cases notified in the week ended November 30, 24 were enteric fever, 15 erysipelas, 11 diphtheria, 18 continued fever, 14 scarlet fever, and 2 membranous croup.

#### ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, November 30, in thirty-three large English towns, including London (in which the rate was 20·5), was equal to an average annual death-rate of 20·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·2 per 1,000, the rate for Glasgow being 24·1, and for Edinburgh 20·1. Smallpox caused 21 of the deaths registered in London.

#### METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1901.*

Mean Height of Barometer,	-	-	-	30·163 inches.
Maximal Height of Barometer (25th, at 9 p.m.),	-	-	-	30·648 „
Minimal Height of Barometer (12th, at 2 p.m.),	-	-	-	28·673 „
Mean Dry-bulb Temperature,	-	-	-	44·0°.
Mean Wet-bulb Temperature,	-	-	-	42·3°.
Mean Dew-point Temperature,	-	-	-	40·3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·253 inch.
Mean Humidity,	-	-	-	87·5 per cent.
Highest Temperature in Shade (on 10th),	-	-	-	56·7°.
Lowest Temperature in Shade (on 17th),	-	-	-	28·3°.
Lowest Temperature on Grass (Radiation) (17th),	-	-	-	21·5°.
Mean Amount of Cloud,	-	-	-	68·0 per cent.
Rainfall (on 11 days),	-	-	-	3·620 inches.
Greatest Daily Rainfall (on 11th),	-	-	-	2·037 inches.
General Directions of Wind,	-	-	-	W., S.W.



*Remarks.*

November, 1901, may be described as a month of paradoxes. The mean barometric pressure was more than three-tenths of an inch above normal, yet it fell to 28·673 inches on the 12th. It was a fine month, yet the rainfall exceeded the average by 1·168 inches, or nearly 48 per cent. The mean temperature was slightly above average, yet the grass minimum, on the 17th, was as low as 21·5, and snow lay on the ground from the 14th to the 17th. The most memorable episode in the month's weather was a great rainstorm on the 11th and 12th, during which 2·913 inches of rain fell in the City of Dublin, and which was accompanied, in its later stages, by a gale of exceptional violence from N.N.E. The duration of bright sunshine was estimated at 75 hours, or a daily average of 2·5 hours.

In Dublin the arithmetical mean temperature (44·9°) was somewhat above the average (44·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 44·0°. In the thirty-six years ending with 1900, November was coldest in 1878 (M. T. = 38·2°), and in 1870 (M. T. = 42·2°); warmest in 1899 (M. T. = 50·7°), and in 1881 (M. T. = 50·3°).

The mean height of the barometer was 30·163 inches, or 0·303 inch above the corrected average value for November—namely, 29·860 inches. The mercury rose to 30·648 inches at 9 p.m. of the 25th, and fell to 28·673 inches at 2 p.m. of the 12th. The observed range of atmospheric pressure was, therefore, 1·975 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 44·0°, or 4·7° below the value for October, 1901. The arithmetical mean of the maximal and minimal readings was 44·9°, compared with a twenty-five years' average of 44·7°. On the 10th the thermometer in the screen rose to 56·7°—wind, S.W.; on the 17th the temperature fell to 28·3°—wind, W. The minimum on the grass was 21·5°, also on the 17th.

The rainfall was 3·620 inches, on 11 days—the rainfall was considerably above, while the rainy days were decidedly below the average. The average rainfall for November in the twenty-five years, 1865–89, inclusive, was 2·452 inches, and the average number of rainy days was 17·0. In 1888, 6·459 inches fell on 26 days. On the other hand, the rainfall in 1896 was only ·664 inch on 9 days. In 1899, 1·964 inches fell on 13 days, and in 1900, 4·873 inches on 19 days.

High winds were noted on 8 days, and attained the force of a gale on four days—the 12th, 13th, 18th, and 19th. The atmosphere was more or less foggy in Dublin on the 2nd, 4th, 5th, 16th, 23rd, 25th, and 26th. A solar halo was seen on the 6th, and again on the 18th. Lightning was seen on the 10th and 12th. Snow, sleet, and hail fell on the 13th, 14th and 16th.

The rainfall in Dublin during the eleven months ending November 30th amounted to 24·086 inches on 156 days, compared with 15·378 inches on 141 days during the same period in 1887, 25·982 inches on 173 days in 1898, 24·450 inches on 162 days in 1899, 32·736 inches on 196 days in 1900, and a twenty-five years' average of 25·292 inches on 177·4 days.

At Cloneevin, Killiney, Co. Dublin, 3·10 inches of rain fell on 10 days, compared with a sixteen years' average of 3·085 inches on 16·6 days. Of the total fall 2·92 inches fell on 5 days (10th to 14th). The maximal fall in 24 hours was 1·85 inches on the 11th. Since January 1, 1901, 26·10 inches of rain have fallen at this station on 161 days. The corresponding figures for 1897 were 28·64 inches on 184 days; for 1898, 26·77 inches on 173 days; for 1899, 27·98 inches on 162 days; and for 1900, 33·47 inches on 188 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·395 inches on 13 days. Of the total quantity 2·050 inches fell on the 11th, and ·900 inch on the 12th. From January 1st, 1901, up to November 30th, rain fell at Greystones on 147 days to the amount of 31·425 inches. The corresponding figures for 1897 were 38·185 inches on 188 days; for 1898, 28·786 inches on 156 days; for 1889, 32·870 inches on 162 days; and for 1900, 30·926 inches on 173 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 3·196 inches on 13 days, compared with 3·189 inches on 12 days in 1899, and 5·724 inches on 18 days in 1900. The maximal falls in 24 hours were 1·856 inches on the 11th, and ·864 inch on the 12th. Since January 1, 1901, the rainfall at Newcastle has amounted to 28·149 inches on 155 days. The corresponding figures for 1898 were 31·197 inches on 157 days; for 1899, 30·832 inches on 152 days, and for 1900, 34·323 inches on 168 days. On the 4th the screened thermometers at the National Hospital rose to 55·7°, on the 15th they fell to 28·3°.

At the Railway Hotel, Recess, Co. Galway, the rainfall was 5·800 inches on only 9 days, compared with 5·074 inches on 23

days in November, 1899, and 6·089 inches on 23 days in 1900. The maximal fall in 24 hours was 2·850 inches on the 11th. Next day ·620 inch fell, accompanied by a westerly gale. On the 19th 1·165 inches fell.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on only 8 days to the amount of 3·53 inches, the greatest measurement in 24 hours being 2·12 inches on the 11th, with a severe storm on the 12th from N.E. The mean temperature in the shade was 44·5°, the range being from 55° on the 4th and 10th to 32° on the 15th, 16th, and 17th. There were snow and hail showers on the 15th.

In the City of Cork, rain fell on only 7 days to the amount of 1·52 inches, or 2·54 inches less than the average. The greatest day's rainfall was 1·18 inches on the 11th.

At the Ordnance Survey Office, Phoenix Park, the rainfall was 4·075 inches on 13 days, 2·305 inches being registered on the 11th.

Dr. J. Byrne Power, D.P.H., Medical Superintendent Officer of Health for Kingstown, Co. Dublin, reports that the rainfall at that health resort was 3·39 inches on 12 days. The mean temperature was 46·7°, the extremes being—highest, 57·0°; lowest, 31·5°; and the mean daily range, 6·5°. The mean sea temperature at Sandycove Bathing Place was 49·8°. The duration of bright sunshine was 68·7 hours. At Bournemouth the thermometer was below 32° on 7 days, and on the 17th it was as low as 25°, while at Kingstown on the same day it did not fall below 31·5°—the lowest for the month. The mean temperature for four consecutive days, the 15th, 16th, 17th, and 18th, was only 35·6° at Bournemouth, while at Kingstown for these four days it was 40·1°. The rainfall on the 11th was 2·04 inches, one of the highest on record, and on the 12th it was 0·87 inch. One of the strongest easterly gales ever experienced at Kingstown set in, quite suddenly, with a rain squall from the N.E., at 3 30 p.m. on the 12th. The Robinson anemometer on the East Pier recorded a mean velocity of 49·9 miles per hour for 16·5 hours, from 3 30 p.m. on the 12th to 8 a.m. on the 13th. The greatest velocity for one hour was 64 miles. During the gale the wind backed from N.E. to N. by W.

## PERISCOPE.

### ROYAL COLLEGE OF SURGEONS, EDINBURGH.

At a meeting of the College, held on Monday, December 16, 1901, the following gentlemen, having passed the requisite examinations, were admitted Fellows of the College:—John Jackson Berry, L.R.C.S.E., M.D., Pendlebury, near Manchester; Richard Horace Gibbs, L.R.C.S.E., Melbourne; George William Hardie, L.R.C.S.E., Newbattle, Dalkeith; James Phillips, M.R.C.S. Eng., L.R.C.P. Lond., Bradford; William Foster Rawson, M.R.C.S. Eng., L.R.C.P. Lond., Bradford; and Alexander Johnston Wilson, L.R.C.S.E., Calderbank, Airdrie.

### PULMONARY TYPHOID FEVER.

THE presence of typhoid bacilli in the sputum of typhoid patients, who, during the course of this disease, have developed a pneumonic condition, has been demonstrated during the past few years by a number of observers, and it is now generally conceded that in a fair percentage of cases in which pneumonia complicates typhoid fever, the typhoid bacillus is the specific cause of the lung lesion. The possibility that the typhoid bacillus may primarily gain entrance into the lungs and produce a pneumonic condition previous to the general infection of the body has also been admitted, but very few instances of such a sequence have been actually demonstrated. In this connection A. Dieudonné (*C'ltblt. f. Bak.*, Oct. 15, 1901) reports an interesting case. The patient was suddenly taken ill with a chill, followed by fever. Percussion was negative, but auscultation gave roughened breathing and râles over the lower lobe of the right lung. The expectoration was "rusty." The following day physical signs showed consolidation of the lower right lobe. At this time the spleen was not enlarged. On the eleventh day characteristic rose spots appeared, and the Widal reaction was positive. Typhoid bacilli were at this time recovered from the sputum; later they were obtained in pure culture from the urine. Coincident with the occurrence of the general infection the spleen became enlarged. Recovery followed, the specific bacilli remaining in the sputum for seven weeks after convalescence. From prophylactic standpoints the recognition of this class of cases is of great importance, as, hitherto, the presence of typhoid

bacilli in the sputum of such has not been fully appreciated, and they have formed fruitful sources for the dissemination of these organisms.—*Medical News*, New York, November 30, 1901, page 860.

REMARKS ON THE DIAGNOSIS OF ADENOIDS IN INFANCY.

THE *Laryngoscope* for September, 1901, contains an article by W. F. Chappell, M.D., of New York, on the above subject, in which he regards the period of infancy as terminating at three years of age. This period he divides into two—the first up to six months, the second from six months upwards. He bases this division on the fact that during the early months of life our diagnosis must be made without the aid of the usual methods of examination, as both digital and posterior rhinoscopic examinations are impossible on account of the narrowness of the naso-pharynx. He inclines to the opinion that adenoids are rarely congenital, and that they do not occur except in rare instances during the first six months of life. He says, "During a recent examination of four hundred and thirty-seven infants under three years of age, forty-five were found under seven months old who had some nasal obstruction; but in no child under three months was the obstruction due to lymphoid hypertrophy in the naso-pharynx." He enumerates the following conditions as causing respiratory obstruction, simulating that caused by adenoids in the naso-pharynx of infants under six months:—1. Lymphatism and lithæmia. 2. Syphilitic or gonorrhœal rhinitis. 3. Congenital atelectasis. 4. Digestive disturbances. 5. Congenital highly-arched palate. 6. Very small or occluded nostril or nasal passages. 7. Unusually small post-nasal space with large Eustachian eminences. 8. Marked anterior projection of the bodies of the cervical vertebræ. 9. Some malformations of the soft palate. 10. Hypertrophy of the tongue.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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FEBRUARY 1, 1902.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. IV.—*On the Rôle of Protozoa in the Causation of Disease.*<sup>a</sup> By EDMOND J. MCWEENEY, M.A., M.D. (R.U.I.); M.R.C.P.I.; D.P.H. (R.C.P. & S.I. Conj.); Professor of Pathology and Bacteriology in the Medical School of the Catholic University, Dublin; Bacteriologist to the Local Government Board for Ireland; President of the Pathological Section of the Royal Academy of Medicine in Ireland, &c.

WHEN I became aware that, on assuming the office of President of this Section of the Royal Academy of Medicine, I should have to deliver an Opening Address, my first impulse was to select as my theme one or other of the bacteriological questions that at present excite the liveliest discussion—the problems of Immunity or those of Tuberculosis. On reflection, however, I saw that immunity is at present in such a complex state, weighted down with multiplicity of observations and abstruse hypotheses, that it would be difficult within the space of time at my disposal to lay even a fairly complete presentment of it before the Section. Another good reason for not taking it up was that my predecessor, Professor O'Sullivan, in his

<sup>a</sup> Being an Address delivered at the Opening Meeting of the Pathological Section of the Royal Academy of Medicine in Ireland, November 1st, 1901.

opening address, delivered in this hall two years ago, has treated a certain aspect of that question in a very admirable way. The other great question of the hour—the doubts cast by Professor Koch on the transmissibility of bovine tuberculosis to the human subject—is one that can be solved only by actual observation and experiment. Until a sufficient stock of new facts has been accumulated further discussion of that question is a mere futility.

There is, however, a subject less complex than that of immunity—more novel, and, especially of late, more fruitfully developed than that of tuberculosis—the Parasitic Protozoa. Not being adequately treated of in the text-books, it has the additional advantage of being, perhaps, less familiar to those of my hearers who have not the leisure to keep abreast of the development of our knowledge in the original sources. Besides, the minute animals concerned are not so readily obtainable for purposes of study as their vegetable congeners, the Bacteria. Not being susceptible of pure cultivation on artificial substrata, they cannot be kept alive in the laboratory for unlimited periods, and are, consequently, inaccessible for study, save when cases of the diseases occasioned by their parasitism come under observation. When I add, further, that one of the most widespread diseases, malaria, is known to be due to protozoal parasites, that vaccinia and small-pox are, with the highest probability, ascribed to the activity of organisms of this nature, and, finally, that a not inconsiderable number of competent observers hold that the cause of cancer—that most dreaded and most mysterious of maladies—is to be looked for in the irritation of epithelial cells by the presence of parasitic intruders of protozoal affinities, it will, I think, be admitted that the subject is one which, if properly treated, ought to prove both interesting and instructive. Whether I shall succeed in making it either the one or the other you must be the judges.

The Protozoa are the lowest animals, each individual consisting of one cell only. This cell must exercise the several functions which, amongst the Metazoa, are exercised by the groups of differentiated cells termed

"organs." It must move, feed, and multiply, and the manner in which the protozoal cell continues to discharge these three all-important functions serves as the basis of classification.

There are four great classes of Protozoa—the Rhizopoda, the Sporozoa, the Flagellata, and the Infusoria.

The parasitic forms that interest us upon this occasion belong, for the most part, to the second of these classes: one, *Amœba coli*, is a Rhizopod. The *Flagellata* include forms that play a subordinate rôle in human pathology, though of the greatest importance with reference to the lower animals. As regards the highest class, that of the Infusoria, I shall have nothing to say at present, save that the pathogenesis of *Balantidium coli* (the chief organism of this class found in the human subject) is still *sub judice*.<sup>a</sup>

The Rhizopods are the simplest of all known forms of life. They consist of a single cell which moves without limbs or muscles, takes in food without a mouth, and digests it without a stomach, excretes without kidneys, and manifests irritability without a nervous system. The typical form is the *Amœba*, a shapeless mass of protoplasm, provided, as are all cells, with a nucleus. There are no permanent locomotive organs such as exist in the higher Protozoa; the animal creeps about by means of projections of the outer clear layer of its protoplasm called pseudopodia. These are constantly being protruded and withdrawn, so that the shape of the animal is in a perpetual state of flux. When circumstances are unfavourable it withdraws all its pseudopodia, assumes a rounded form, becomes coated with a hard, refractive shell, and is then said to be encysted. This encystment is merely a latent phase of life, and is not connected with the reproductive function as it is in the higher classes of Protozoa. The only method of multiplication which the *Amœbæ* are

<sup>a</sup>Since writing the above, I have met with a capital paper by Solovieff [Centralbl. f. Bakt. u. Parasitenk. Abth. I. Bd. XXIX., pp. 821 and 849] which conclusively proves that ulcerative colitis may be caused by this Infusorian. The appended bibliography shows that the majority of previous observations of the parasitism of *Balantidium* have been made in Russia. Solovieff's case occurred at Tomsk, in Siberia.



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certainly known to possess is simple division of the parent organism into two daughter cells, each of which carries away one-half of the original nucleus. Whether mitotic changes always occur in the latter is still uncertain. That they do in some cases is undoubted. Food particles that have been absorbed into the body of *Amœbæ* become surrounded by a clear area called a vacuole, containing a digestive liquid, proved by Metschnikoff and Le Dantec to have an acid reaction. The food granule immersed in this liquid gradually melts away, save for the indigestible fragments which are finally expelled by contraction of the vacuole. [A semi-diagrammatic tinted drawing of *Amœbæ* was here thrown on the screen.]

*Amœbæ* are normal occupants of the human intestine. Lambl first saw them there in 1870. Schuberg demonstrated them repeatedly in the stools of healthy individuals after administration of Carlsbad salt. Lösch, in 1875, ascribed dysentery to their parasitism; Koch, in 1887, found them in the intestinal wall of patients dead of tropical dysentery. Kartulis found them in the liver-abscesses that form so frequent a complication of this form of dysentery. Councilman and Lafleur, working at the Johns Hopkins Hospital in 1890-91, and Kruse and Pasquale, working in Egypt in 1892, further extended our information and made it precise. The literature on the subject is very extensive and readily accessible to anyone who will consult the usual sources. All up to 1898 is quoted in Ciechanowski and Nowak (*Centralbl. f. Bakt., Abth. 1, Bd. XXIII., p. 445*). The difficulties in the way of forming a definite conclusion as to whether the *Amœbæ* are really the cause of dysentery are briefly as follows:—Similar Rhizopods are known to occur in the bowel of healthy individuals; they have been absent in cases of genuine tropical dysentery; leucocytes and large flat cells of "endothelial" type are liable to be mistaken for them. Hence too much confidence cannot be placed in many of the reputed positive findings. They have been found in a liver-abscess where there was no dysenteric change in the bowel, but only tubercular ulceration. [Kartulis in *Virch. Arch.*, Bd. 148, p. 106.] They have not as

yet been cultivated, hence the evidence obtained as to their pathogenicity by animal experiment is not free from objection, as other substances of an irritating nature are contained in the mucus or pus in which they occur, and injected along with them may possibly account for some of the positive results that have been recorded. Thus, for instance, Gasser (*Acad. de Méd. Exp.*, 1895) found that on injecting into the rectum of cats sterilised sand he obtained ulcers not dissimilar to those resulting from the injection of dysenteric material. It is difficult, however, to reject some of the results obtained by Quinke and Ross (*Berl. klin. Woch.*, 1893, p. 1089), Kartulis (*Centralbl. f. Bakt.* IX., 1891, p. 365), Kruse and Pasquale (*Ztschr. f. Hyg.*, 1894, p. 1), and Zancarol (*Rev. de Chirurgie*, T. XIII., 1893, No. 8), who obtained typical dysentery by injecting the pus of liver-abscesses—sterile, so far as freedom from bacteria is concerned, but containing *Amæbæ*—into the rectum of cats. The general conclusion to which I incline, after a careful survey of the literature, is that the *Amæba coli* is in all probability either wholly or partly responsible for the causation of one form of dysentery—viz., the form termed tropical by Councilman and Lafleur, which is not endemic in this country. Whether a genuine case of this kind has ever been recorded from Ireland I do not know.

There is another parasite usually classed with the *Myxomycetes*, or slime-fungi, but placed by Delage amongst this lowest class of the Protozoa—namely, *Plasmodiophora brassicæ*, which produces in turnips and cabbages appearances somewhat analogous to tumour formation. I will reserve its description until I come to the ætiology of cancer.

The second class of Protozoa is the Sporozoa. In their adult stage these are amœbiform organisms possessing a distinctive mode of reproduction, which consists essentially in the formation of numerous minute spore-like bodies within a cyst or capsule, the whole process reminding one somewhat of what takes place in puff-balls. There are several subdivisions, all of them interesting. Most highly organised and largest are the *Gregarinidæ*, which are para-

sitic in Worms, Crustacea, and other Invertebrates, but not in Molluscs or Vertebrates; hence I pass them over in silence. Next come the *Coccidia*, and here, although these creatures have been very rarely met with in man, some description is called for on account of the close relationship in which they stand to the malarial organisms, and also because cancer has been of late years frequently attributed to the parasitism of *Coccidia*. It is in the rabbit that this kind of parasite is most readily observed. A large proportion of the animals in many hutches are found on examination to harbour *Coccidia*, either in the liver (*C. oviforme*) or in the intestinal wall (*C. perforans*). When badly affected, the animal is weak, anæmic, suffers from tympanites and diarrhœa, and succumbs to marasmus in a few months. At the autopsy the liver is more or less hypertrophied and studded with whitish specks and patches, varying in size from a millet-seed to a small pea, and internally consisting of a creamy mass with numerous encysted *Coccidia*. Sections reveal a trabecular structure covered with columnar epithelium, evidently derived from the bile-ducts, the cells of which are invaded by the rounded or oval parasites which push the nucleus to one end, and come to occupy the main bulk of the cell.

[*Micro-photographs of sections of the affected bile-ducts were here thrown on the screen.*]

These *Coccidia*, when mature, fall away into the cavity of the bile-duct, and reach the intestine, whence they are expelled together with the excrement into the outer world. There are two species of *Coccidia* found in the rabbit, one inhabiting the liver, the other the intestinal wall, and as their life history is practically identical, and is of the utmost importance for a thorough comprehension of the parasitic Protozoa in general, I shall now describe it, beginning with the mature organism as found in the excreta of the affected rabbit. They are roundish or oval bodies, usually between 30 and 40  $\mu$  long, and 18 to 20 wide, consisting of a thick double-contoured wall, which is transparent, and highly refractive, and encloses a roundish granular mass of protoplasm, which does not fill up the whole interior space. The resemblance to the egg

of some intestinal worm is very striking—hence the specific name, *oviforme*. It will be well to employ the nomenclature suggested by Schaudinn, who has done a great deal of work on these and allied forms of protozoal parasite, and terms the mature coccidium the *Oocyst*, and its sphere of contained protoplasm the *Sporont*. When the oocyst is kept under observation in the hanging-drop or moist chamber, the contained sporont swells up, and its nucleus divides into four parts, each of which becomes surrounded by a portion of the protoplasm, so that the oocyst now comes to contain four nucleated cells, each of which is called a *Sporoblast*. Each of these becomes surrounded by a very tough, impermeable wall, and is then called a *Sporocyst*, or, shortly, a *spore*. The four spores so formed are ultimately set free by the rupture of the containing cyst-wall. The nucleus of the spore has meanwhile undergone division, and two crescentic or sickle-shaped daughter cells, called *Sporozoites*, are produced, a not inconsiderable fraction of the protoplasm being left unused—a phenomenon very frequent among the Protozoa. The unused part of the protoplasm is called the *Restkörper* by the Germans, the *corps de reliquat* by French biologists. The crescentic shape of these bodies, and the peculiar way they are pressed together, are highly characteristic of this group of parasites, and will be met with again by and by when we come to speak of the malarial organism.

The spores, with their contained sickles, being highly resistant, remain alive for an indefinite period in the dust of the rabbit hutch or run, till they are swallowed by another rabbit, when they burst, and the contained *Sporozoites* are set free, and, becoming amœboid, bore their way by means of their anterior end, which seems to be sharper and harder than the rest of their body, into a cell of the biliary or intestinal epithelium of the new host. Once inside the cell the amœboid Sporozoite becomes converted into a rounded mass of very granular protoplasm, which rapidly increases in size, pushes the nucleus of the host-cell away to one end, comes to occupy the entire cell, becomes oval, develops its cyst wall, and is then as an

"oocyst" ready to fall away into the lumen of the cavity concerned.

This developmental cycle, first followed by Leuckart, would not, however, satisfactorily account for the extreme degree to which the affected animals are liable to be infested, every epithelial cell for a considerable length of bile-duct or intestine being found to harbour several *Coccidia* of various sizes and ages, the so-called multiple infection or *Mehrlings-infektion* of the Germans. It was noticed by R. Pfeiffer in 1892 that *Coccidium*-like forms occurred in the rabbit's intestine which were devoid of thick capsule, and which divided up interiorly into a *large number* of sickle-shaped bodies, such division taking place *directly* from the protoplasm of the *Coccidium* without the intervention of an intermediate or Sporoblast stage. Pfeiffer considered this to be a condition of sporulation adapted for the multiple-infection of the same individual. He showed that the reproductive process of *Coccidia* did not of necessity involve encystment and sporoblast-formation, nor expulsion from the intestinal canal. On attaining their full size in the epithelial cell they at once underwent division into a large number of Sporozoites, which invaded the neighbouring cells, and, repeating the process, produced that extreme degree of infection which is so characteristic of this parasitic disease. As soon as—through exhaustion of the system of the host-animal, or its saturation with the metabolic products of the parasites—these latter begin to find their surroundings somewhat less favourable, instead of proceeding at once to Sporozoite-formation, they became converted into the permanent cysts, with their contained Sporoblasts, and were expelled from the bowel to seek a new home in another animal of the same species.

These views of Pfeiffer were not universally accepted, and met with considerable opposition in France, where the leading authorities on this subject—Schneider and Labbé—considered that the parasite found sporulating in the bowel was different from that found in the fæces, and created a new genus for it, which, in honour of its dis-

coverer, they called Pfeifferella. That the two cycles of development really belonged to the same organism was demonstrated in 1897 by Léger, Schaudinn, and Siedlecki, and by Simond. Names for the several phases of the endogenous cycle were suggested by Schaudinn, who terms "*Schizont*" the parent organism, undergoing segmentation within the host-animal—this stage being homologous with the encapsulated "*Sporont*" of the other cycles. The sickle-germs so produced he terms *Merozoïtes*. They are homologous with the *Sporozoïtes* of the other cycle. According to this view when an *Oocyst* is taken with food into the alimentary canal of a hitherto unaffected animal, the 8 *Sporozoïtes* developed from it invade epithelial cells and attain maturity in the shape of rounded, granular, non-encapsulated, protoplasmic masses—the *Schizonts*. These divide at once into numerous *Merozoïtes*, which invade fresh cells, and so on through many generations until a period comes when circumstances become less favourable, reproduction ceases within the host animal, and permanent cysts are formed—"oocysts"—intended to mature outside the body and infect fresh animals. Now, the termination of the endogenous or schizogonous cycle and the commencement of the exogenous or sporogonous cycle has been found to be occupied by a most remarkable sexual process strictly comparable to that which obtains in the higher animals. When the rate of endogenous multiplication begins gradually to slacken two forms of mature parasites are to be found. One is larger, its protoplasm more richly stored with food granules—the *Macrogamete*. The other smaller and less granular—the *Microgametocyte*. The nucleus of the latter divides up into many smaller nuclei, which assume a peripheral position, and ultimately detach themselves from the mother cell, each taking with it but a very thin coating of protoplasm. The resultant bodies are called *Microgametes*. They bear a close resemblance to the *Antherozoids* of liver-worts and mosses, and discharge the same functions as these and as the *Spermatozoa* of the higher animals. Provided as they are with one or two flagella, they move actively in the direction of the nearest *Macrogamete*, into which one of them penetrates and dis-

appears, its nuclear substance being fused with that of the female reproductive cell. A double wall is then formed round this conjugation product or *Zygote*, and it becomes an *Oocyst* and is ripe for expulsion into the outer world. Once outside the host-animal it forms the four spores, each of which with its two *Sporozoites* is ready for infecting a fresh animal. Such is the marvellous history of these parasites. In recounting it I would gladly have dwelt upon the interesting nuclear phenomena, including the reduction of chromosomes, by which sexual reproduction is preceded. In view of the unavoidable length of this exposition I have felt it necessary to refrain. Before leaving this part of the subject I would emphasise three points. First, the Coccidia are *intra-cellular* parasites; second, they produce in animals cachexia and appearances suggestive of adenomatous tumour-formation; third, it has consequently occurred to many workers that similar intra-cellular parasitism may be the cause of malignant new growths in the human subject, and the search for Coccidia has been industriously yet unsuccessfully prosecuted.

The first half of the last decade of the 19th century was a period of great activity in this field of work. Russell's "fuchsin-bodies" were the first of a series of objects demonstrated in the interior of cancer cells by the aid of special fixing and staining methods. Korotneff found a whole Gregarine, as he thought, lying amongst the cells of the only epithelioma he examined. He created a new genus and species for it—*Rhopalocephalus carcinomatocus*. Then came Ruffer and Walker and Plimmer with cell-inclusions which they concluded to be Protozoa. They invoked the authority of Metschnikoff in favour of this interpretation of what they saw, but could not cultivate their organisms, or obtain satisfactory results from inoculation experiments. On the Continent L. Pfeiffer, the founder of our knowledge of parasitic Protozoa, adopted the view that the small cells often to be found around the advancing margins of cancerous neoplasms were really parasites. He gave them the name of *Amœbosporidia*. He very kindly sent me at the time some photographs, which I now show. Their interest is purely historic. Nils

Sjöbring, Soudakevitch, and many other workers industriously described intra-cellular "inclusions" of various kinds which they thought to be Protozoa. [*Micro-photographs of some of these were thrown on the screen.*]

Later on, the interpretation of the appearances changed and, mainly in Italy, the view gained credence that the bodies in question were not animals, but minute plants belonging or allied to the group of the *Saccharomycetes* or yeasts. By the aid of highly specialised histological technique, Sanfelice, Roncali, Binaghi, Pianese, and many others satisfied themselves of the existence of organisms of this nature in cancer cells. Sanfelice succeeded in growing similar organisms from fruit-juice and obtaining positive results by injecting the cultures into animals. To the species so isolated he gives the name of *Saccharomyces neoformans*. During the last few years Plimmer also claims to have cultivated from cancer tissue an organism of this nature. He made a communication on the subject to the Royal Society in 1899, and wrote a paper in the *Practitioner* describing his results. His organism was obtained from a specimen of rapidly-growing breast-cancer. The cultures were made on a liquid medium consisting of decoction of cancer tissue with glucose and tartaric acid. Growth took place under anærobic conditions, and what he calls the virulence of the organism was best maintained in this way. He seems somewhat uncertain as to the biological position of the organism; whether to rank it with the Protozoa or with the Blastomycetes. When we consider that Plimmer has had his organism under pure cultivation, and has performed numerous animal experiments with it, to find him still uncertain as to whether it ought to be placed amongst the Yeasts or the Protozoa is not reassuring. I have read his paper in the *Practitioner*, and it seems to me open to grave criticism under various heads, to enter upon which would be to take up a great deal of time, and would be outside the scope of my endeavour in this address. The industrious and persistent efforts that have been made in various quarters to identify these cell-inclusions with Protozoa are praiseworthy, but show a lamentable want of knowledge of the zoological aspect of the ques-



tion, without a competent training in which the most painstaking endeavours to correctly appreciate the nature of a cell-inclusion must of necessity fail. The hunt for cancer-parasites has rightly been stigmatised by Schaudinn as one of the most melancholy chapters in the investigation of the Protozoa.

That tumours of parasitic origin occur in plants is well known. Leaving out of consideration the numerous variety of Galls as not producing constitutional disturbance in the host plant to such an extent as to justify us in applying to them the term "tumour," we have in *Plasmodiophora brassica* (Woronin) a capital example of a Protozoal (or Myxomycetal) parasite setting up in plants belonging to the order Cruciferæ, especially in the cabbage and turnip, a malignant tumour process leading to cachexia and death. Through the kindness of Professor Carroll, Principal of the Albert Agricultural Institution, Glasnevin (Department of Agriculture and Technical Instruction), I have obtained some specimens of plants so affected. [*Demonstration.*] I think you will agree with me that the resemblance to ulcerating epithelioma in some of the cabbage stalks is very striking. Our peasants apply the term "club root," "finger-and-toe," and "anbury" to the disease as it affects turnips. It is a source of serious loss in some parts of the country, especially in Co. Wexford. The organism producing it is, in its adult stage, a shapeless mass of protoplasm, like a huge amœba, termed a plasmodium. It lives in the interior of the plant cells and destroys them. After a while it divides up into a vast number of minute fragments, each of which becomes rounded-off, encapsulated, and forms a spore. When set free by the decomposition of the affected root the spores burst, their contents emerge as a minute amœba, and the sv. arms of amœbæ so formed coalesce to form a plasmodium, then attack another plant, and so on. I now show sections of sublimate-fixed material showing the spores with their shrunken protoplasmic contents lying close-packed in the large parenchyma cells of the turnip. [*Demonstration.*] Professor Podwyssozki of Kieff has recently (*Centralbl. f. Bakt.*, Vol. XXVIII., No. 3) endeavoured to show that

tumours may, in rabbits and guinea-pigs, be produced by injecting these spores. To me, however, his description reads more like production of inflammatory tissue through introduction of a foreign body rather than true tumour-formation.

Passing now from the *Coccidia*, real or supposed, we shall take up the consideration of the next order, the *Hæmosporidia*, to which belong the parasites of the several forms of malaria. Much has been written on this subject during the last few years, and many wonderful discoveries have been made. They have excited so much attention that the leading facts may be assumed as familiar to my hearers, and it will remain for me only to shortly trace the development of our knowledge and demonstrate on the screen the close similarity between the developmental cycles of the malarial plasmodium and of the *Coccidium*, my object being to show that what we know of the malarial parasite does not constitute an isolated group of phenomena, but is merely what we should expect, having regard to the biological position of that organism.

Laveran discovered the parasite in the red corpuscles of man in 1880. Golgi, in 1886, differentiated the several forms of parasite corresponding to the clinical varieties of the disease. Its sporulation accounted for its increase within the human body. How it obtained entrance to, or exit from, the human body remained a mystery. In 1896 Patrick Manson, guided by his previous discovery of the development of the *Filaria sanguinis hominis* in the mosquito, announced his suspicion that the malarial parasite might also be withdrawn from the human body by the agency of that insect. About the same time Bignami in Italy put forward his view that malaria was caused by the bite of mosquitoes—an idea that had prevailed in Italy amongst the common people ever since Roman times. The difference between Manson's view and Bignami's was this: Manson thought the parasite was sucked up together with blood by the mosquito, and thus escaped into the outer world. When the mosquito died in or near water the parasite might, he

thought, pass through a stage of development in the pool, and then perhaps get back into human beings who drank the water. Bignami thought that the mosquito took up the parasite somewhere and introduced it into the human body. How it got out again he did not explain. Each writer strove to accumulate facts in support of his hypothesis. Manson set Ross to work. Bignami went to work himself so far back as 1894, aided by Dionisi. Their efforts remained fruitless at first, because, no doubt, they were working with the wrong species of mosquito. Ross meanwhile was more successful. His results on human malaria being unsatisfactory, he turned his attention to the malaria of birds affected with the parasite *Proteosoma Grassii*, and soon established the following facts. The blood of birds containing the parasite is sucked up by the mosquito. The parasite develops further in their stomach, bores its way through the wall of the intestine, and on the cœlomic aspect of the latter, forms cysts the contents of which break up into innumerable tiny rods, germinal rods, which are after a while emitted into the body cavity, but ultimately become collected into the salivary or poison gland and its duct leading to the proboscis. Thence they pass into a hitherto unaffected bird, when an infected mosquito sucks its blood. This remarkable discovery was published by Ross in 1898. Meanwhile Grassi went to work on the basis of Bignami's inoculation theory, to find which of the many sorts of gnat found in malarial districts in Italy was concerned in propagating the disease, and after considerable labour in excluding various commonly occurring forms, such as *Culex pipiens*, concluded that the distribution of a large greyish mosquito *Anopheles claviger* (Fabr), was practically co-extensive with that of malaria. In collaboration with Bignami he began trying to artificially infect patients by subjecting them to the bites of mosquitoes. After several failures they at last obtained positive results. Patients who had never had malaria, and were kept in a room at the San Carlo Hospital, developed typical seizures after being bitten by mosquitoes of this species. As the result of further researches of Grassi, Schaudinn, Koch,

Daniels, and others, it was found that the species of the genus *Culex* were responsible for propagating the malaria of birds, whilst that of man was disseminated by species of *Anopheles*. There were, however, some obscure points in the life-history of the parasites which had not as yet been explained. Crescentic forms of the parasite had been observed for many years in the blood of patients affected with tropical malaria. Some of these had been seen to change their shape to oval, and subsequently to become round, and then to shoot out or give off actively motile filaments which detached themselves from the parent sphere and wriggling away were lost to sight. The "flagellate bodies" were usually held to be agonal or degenerative forms due to the unfavourable environment and fall in temperature experienced by the parasite on being withdrawn from the circulation. If Manson's views were correct, the crescent ought to undergo its further development in the mosquito's stomach, and Ross on making the experiment by examining the contents of the stomach of a gnat shortly after it had bitten a patient suffering from malarial cachexia, and whose blood contained numerous crescents, he found that all of them rapidly assumed the spherical form, and that from nearly half of those the problematical flagella were emitted with a hitherto unexampled rapidity. What became of them he could not ascertain. The solution of the puzzle remained for MacCallum. His studies, carried out in America on the blood of crows affected with the malarial parasite, *Halteridium*, showed him two forms of parasite, one granular and staining deeply in methylene blue, the other hyaline. The changes undergone by these take place in the hanging-drop of blood or serum, and can be, therefore, readily followed. From the hyaline individuals are produced with remarkable suddenness several flagella which detach themselves, wriggle towards the granular forms, and ultimately penetrate into them.

The parasites of human malaria have since been seen by numerous observers to go through a similar series of changes, and the meaning of the process is now universally acknowledged. It is an act of fertilisation comparable

with that which underlies sexual reproduction in the higher animals. The crescent-shaped malarial parasite is a form preparatory to the sexual process. In the stomach of the mosquito the crescents become spheres, and some of them have a granular appearance. This is the *Macrogamete*, or female cell homologous with the ovum of the higher animals. Other spheres are smaller and hyaline. These are the *Microgametocytes*, homologous with the epithelial cell of the testicular tubule of the vertebrates. The "flagella" so-called, are the micro-gametes, the homologues of the spermatozoa. The fertilised female individual does not, however, at once become encysted as amongst the Coccidia, but it assumes an elongated form not unlike a little worm, the *Zygote* or *Ookinete*, according to Schaudinn's nomenclature. It bores its way into a cell of the lining epithelium of the digestive tube of the mosquito. Soon it reaches the coelomic aspect of the bowel, its movements cease, it increases vastly in size, its shape becomes spherical, a thick capsule develops round it, and it becomes, in fact, an *oocyst*. Its nucleus meanwhile divides repeatedly, and the protoplasm arranges itself round each daughter nucleus. These initial products of cell-division are the *sporoblasts*. They again divide up into minute rod-like cells, the sporozoites, which become collected in the proboscis, possibly by virtue of some chemotactic influence exerted by the insect's saliva. They are then ready for introduction into the human subject. [*These stages in the developmental cycle were illustrated by lantern slides.*]

(To be continued.)

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ART. V.—*Appendicitis*.<sup>a</sup> By WM. TAYLOR, F.R.C.S.I.; Surgeon to the Meath Hospital and County Dublin Infirmary, and to Cork-street Fever Hospital, Dublin.

GENTLEMEN,—To-day, as I promised, I intend to give you a lecture on Appendicitis, taking two illustrative cases out of those you have seen in the wards under my care during

<sup>a</sup> A Clinical Lecture delivered in the Meath Hospital in the Winter Session, 1901-02.

the past year. The history of these cases is shortly as follows:—

CASE I.—R. E., aged about thirty years, while at business on the 28th of December, 1900, was suddenly taken ill with vomiting and pains across his stomach, the severity of which compelled him to go home to bed and send for a doctor, who came and administered some anodyne. This temporarily allayed the pain, but the vomiting was repeated each time he took anything to drink. For two days prior to this sudden onset of illness he had a slight attack of diarrhoea, which now got somewhat worse, but for over two years prior to this he had shown a tendency to constipation and indigestion.

Until the 7th of January, 1901—that is, till the 10th day of his illness—when he was sent into hospital labelled typhoid, the pain, though diminished, never quite disappeared, but became more localised in the region of the right iliac fossa, while the tendency to sickness persisted. I have no knowledge of the state of his temperature and pulse prior to admission. Having been so labelled he was placed under the care of Sir John William Moore, who requested me to see him next day on account of the presence of a large tumour of a somewhat rounded outline, which occupied the lower part of the abdomen and extended upwards as far as the umbilicus. At first sight it looked like a distended bladder, but the house surgeon had previously passed a catheter and drawn off the water, without, however, diminishing the size of the tumour in the least. On examining him I was of the opinion the tumour was the result of a collection of pus; fluctuation was quite distinct, and percussion was easily elicited. From the history and signs I considered the case one of perforative appendicitis, and recommended immediate operation. With this opinion Sir John William Moore and Dr. Craig, who subsequently saw the case, agreed. The patient was accordingly prepared for operation and removed to the operating theatre, where I opened the abdomen by an incision through the right linea semilunaris and evacuated an enormous quantity of foetid pus. I do not remember having ever seen so much pus come out of an abdomen. It seemed to come from every conceivable place—from the pelvis, from amongst the small intestines on the left side, from behind, and from the outer side of the cæcum, and from underneath and internal to the ascending colon. There were plenty of soft adhesions, which readily gave way and permitted free escape of the pus. Over an hour was

spent washing out the abdomen with warm sterilised water and hot normal saline solution. The appendix was not seen, and as every small adhesion which was broken down to give exit to the pus bled copiously, and as the condition of the patient at the time was anything but favourable, I decided not to look for the appendix, but leave it to take care of itself. A small concretion was found near the base of the cæcum.

A large rubber drainage tube, with a gauze wick, was passed down to the pelvis, while a similar one was passed upwards behind the cæcum and ascending colon on the outside and the small intestines on the inside. A small gauze wick was passed to the outer side of the cæcum, and the upper part of the wound closed. The subsequent treatment consisted in hypodermic injections of strychnin, hot saline injections with brandy into the rectum and nutrient enemata. I should say that his temperature from admission until he was operated upon varied from 97° to 99·8°, but the pulse varied from 120 to 136 per minute.

The night after operation his temperature was 102° and his pulse 120, while the respirations were only 20 to the minute. He had no pain to speak of, and did not vomit once. The next day, as there was a great deal of tympanites, I ordered him a turpentine enema, which brought away a large motion and somewhat relieved the distension.

On the third day the dressings were stained with fæculent material, and for eight days after this all his fæces passed through the lower part of the wound, but after the eleventh day this gradually stopped; the bowels began to act regularly, while the wound closed quickly by granulation firmly from the bottom of the fistula. He was discharged from hospital quite well at the end of February and has since remained well.

CASE II.—The second case, you will remember, was that of a young boy, aged eleven years, who stated that, after a good supper of cockles on a Wednesday night last May, he was awakened early on Thursday morning with pain in his stomach and vomiting. The pain was not very severe, and the vomiting soon ceased, still he did not feel well enough, though only a boy, to get up out of bed on that day or the next, on the afternoon of which the pain became much worse and the vomiting returned. His mother then brought him to hospital, where the house surgeon admitted him, and ordered hot fomentations to be kept constantly applied over the

lower part of the abdomen. This gave him some relief at the time, but at 11 p.m. I was telephoned for and told of the case, the statement then being that the boy had got suddenly very bad; his pulse, taken a few moments before by the house surgeon, was 168 to the minute, while his temperature was only  $96^{\circ}8'$ , his skin being covered with a cold, clammy perspiration. I saw him very soon afterwards, and from the history and condition in which I found him was of the opinion that a sudden perforation had taken place into the general peritoneal cavity of an appendical abscess, or that gangrene had supervened. He did not then complain of any pain, unless when pressed on fairly firmly over the region of the appendix. I decided to operate at once, but thought the prospects of success unpromising. While permission was being obtained from his parents preparations were made for operation, and the boy's shock was treated by a hypodermic of strychnin,  $\frac{3}{16}$  gr., while  $\frac{3}{4}$  i of brandy in 8 ozs. of warm saline solution were administered per rectum.

At 1 a.m. I opened the abdomen by a small oblique incision in the usual site, and found a small quantity of thick, foetid pus. Lying near the base of the cæcum was observed the terminal part of the appendix, quite gangrenous and separated from the rest of that structure. This part I removed, and carefully mopped up the pus. Then we very gently flushed out the space with hot saline solution, dried it carefully and packed it loosely with gauze, the upper part of the wound being closed with through and through sutures. The patient's condition forbade further search for the rest of the appendix. Dressings were applied, and he was returned to bed, the operation lasting scarcely twenty-five minutes. On the second day the edges of the wound were completely gangrenous. The sutures were removed, and the infected edges pared with scissors, and subsequently well swabbed with pure carbolic acid.

In spite of the condition of the wound the temperature never exceeded  $99^{\circ}$ , and the boy was discharged quite well four weeks later. I should, perhaps, mention that some sloughs were removed about four or five days after the operation, which I took to be the remainder of the appendix.

Having thus recalled to your memories the histories of these two cases, we will now proceed to study briefly the subject of appendicitis generally.

The ætiological factors of importance you may consider



as predisposing and exciting. The predisposing are—age, sex, season, previous attacks, and certain other diseases. *Age* is only of moderate importance. The disease is more common between ten and thirty years of age. The youngest case I have read of was only seven months old, while the eldest was over seventy years. The increased susceptibility of young adults is due to the disturbances of the gastro-intestinal tract dependent upon dietary indiscretions so frequently seen during this period of life, and also to the proneness of adenoid tissue, of which the appendix contains a proportionately very large amount, to inflammation—take for analogy the tonsils—whereas in advanced life people are generally more judicious in every way, and adenoid tissue tends to atrophy. *Sex.*—Males are more predisposed than females; 80 per cent. of the cases are said to occur in men—that is, appendicitis is four times commoner in men than in women—due probably to the fact that males are more exposed to altered climatic conditions, such as cold and wet, while the appendix in the female is said to have a better blood-supply; it occasionally gets a second arterial twig from the right ovarian artery. *Season.*—It has been said that appendicitis is more common in the summer and autumn seasons, possibly due to the greater prevalence of gastro-intestinal derangements at these seasons of the year. One attack is generally, though not necessarily, followed by another.

Other conditions as predisposing to appendicitis are chronic constipation, typhoid fever, gastro-enteritis, and influenza. Gastro-enteritis is probably of more importance than constipation. An attack of indigestion is often the apparent exciting cause. The appendix, one would naturally conclude, should be prone to participate in the morbid conditions implicating the intestinal tract, especially in its neighbourhood. In this way dysentery may be of ætiological importance, not only as a pre-disposing but also as an exciting factor. Similarly, ulceration, and, indeed, perforation of the appendix has been recorded in typhoid fever; thus this condition may be both a predisposing and an exciting factor. The reason why I mention in-

fluëza as a predisposing factor is that in some cases that disease manifests itself by severe gastro-intestinal symptoms.

The exciting causes, from a clinical point of view, are disturbances of digestion—the diarrhœa which is associated with them possibly carrying, from the upper part of the alimentary tract to the region of the appendix, bacteria which may be of a more virulent character than those generally found there, while those normally present are said to obtain increased virulence during these attacks.

Cold and wet must always be taken into consideration, but probably here the appendix was predisposed to inflammation in some of the previously mentioned ways. In this way injury may also be an exciting cause. Cases of tuberculosis and actinomycosis of the appendix have been recorded. It is not my intention now to go into the subject of the influence of the psoas muscle as a factor in the causation of appendicitis.

*Pathology.*—Like every other inflammation, this may be acute or chronic, the former of which may subside or persist as a chronic affection. As far as classification goes you will invariably find, whether you read the subject in a general text-book on medicine or surgery or study it by itself in the numerous treatises and monographs now being published on the subject, that each author has his own classification.

One author classifies appendicitis thus:—

- A. *Acute.*—I. Catarrhal, which may be simple, purulent, hæmorrhagic.
- II. Interstitial.
- III. Ulcerative—perforative, non-perforative.
- IV. Gangrenous.
- B. *Chronic.*—I. Catarrhal.
- II. Interstitial.
- III. Obliterating.

Another author gives what he terms a clinical classification as follows:—

- I. Simple Catarrhal, accompanied by inflammatory

changes in the mucous membrane, and ending in resolution or passing on to the more severe forms.

- II. Appendicitis with adhesive inflammation of the peritoneum and ending in resolution.
- III. Appendicitis without perforation or gangrene, with the formation of local circumscribed abscess.
- IV. Appendicitis with perforation or gangrene resulting in acute general peritonitis.
- V. Relapsing appendicitis.

It would seem to me, though, that most of these sub-divisions are often merely stages of one another. It is easy to understand how an inflammation of the mucous membrane which constitutes a catarrhal appendicitis may spread out towards the muscular coat, and thus produce an interstitial form, while this again may extend to the peritoneal coat and cause a peritonitis as well. The peritoneum, though, can become involved from a simple catarrhal inflammation without any implication of the muscular tissue, the infection passing in this case by way of the lymph channels. Again, it is easy to understand how, if the catarrhal process is acute, we may get pus formed inside the appendix—ulceration either in the presence of foreign bodies or not, which, of course, may or may not perforate. If the process is more acute still one can readily understand gangrene supervening. The frequency with which foreign bodies, or, more frequently still, concretions formed in the appendix, are present in these cases of ulcerative and gangrenous appendicitis is worth noticing, but ulceration and gangrene are dependent mainly upon the virulence of the bacteria or their toxins.

Classifications, therefore, seem to me useless clinically, for the simple reason that up to the present we cannot with any degree of certainty infer the pathological condition of the appendix from the clinical phenomena. The severity of the clinical manifestations are, in very many cases, not at all proportionate to the seriousness of the lesions subsequently found, while, on the other hand, the severity of the symptoms may be much greater than the lesion of the appendix justifies. Again, the number of the attacks cannot be relied on as an index of the condition of the appen-

dix. Just as in the appendix we may find different forms, some acute and others chronic, so with the peritoneum, which is generally affected, we may have acute or chronic inflammation, the latter being generally circumscribed, while the former may be either localised or diffuse. The circumscribed varieties may or may not be attended with the formation of pus, but the acute general peritonitis is usually attended with the formation of pus, if, indeed, the patient does not die before it has time to form, death being due to rapid absorption of septic matter. The circumscribed purulent peritonitis, generally called perityphlitic or peri-appendicular abscess, is most frequently met with in one of four situations—

I. Where it points in front, being bounded posteriorly and somewhat medianly by the cæcum. The iliac fossa forms its outer wall, while some coils of intestines are usually situated above. The appendix is here placed anteriorly, or attached to the outer and lower surface of the cæcum.

II. Posteriorly.—Here the cæcum is its anterior boundary, while posteriorly we have the posterior abdominal wall. In this case the appendix is attached to the posterior surface of the cæcum and is directed upwards. This form may spread up around the kidney.

III. Medianly, bounded externally by the cæcum and ascending colon; posteriorly by the meso-colon; to the left, in front, and above by coils of intestines. These may attain a very great size.

IV. In the pelvis, and generally the right half of it, and in the recto-vesical pouch, but they may extend to the left half of the pelvis. Any of these forms of abscess may burst into the general peritoneal cavity, and thus cause general septic peritonitis.

Some of the more unusual situations in which these abscesses have been encountered are worth mentioning—such as, in the neighbourhood of the gall-bladder and beneath the right lobe of the liver; beneath the diaphragm (hypophrenic); in the left iliac fossa, and even in the sac of a hernia. It is also possible for the abscess to become extra-peritoneal, or, indeed, to form there primarily as a

retro-peritoneal abscess, which may subsequently follow the course of the psoas muscle or iliac vessels and present below Poupart's ligament. Of this I can call to mind one example out of which over a pint of pus was evacuated, and the patient made an excellent recovery. The pus may extend towards the kidney, thus producing a large peri-renal abscess. Of this form I can call to mind two cases which were diagnosticated peri-nephritic abscesses. From this the abscess may extend above the liver, and subsequently open through the diaphragm into the pleural cavity or lung, or perforate again into the peritoneal cavity.

These abscesses may have diverticula, passing in different directions and connected only by small channels. Again I should mention that they may burst into the cæcum, colon, or rectum, and of this I know of one example. Another result of these abscesses may be the occurrence of thrombosis of some of the abdominal veins, which may or may not be infective, while erosion of the internal iliac artery, or one of its branches, has been described. To enter into the arguments for and against the fact that bacteria take a prominent part in the production of appendicitis is not part of the work I set myself to-day. Suffice it to say that I believe they do take a large, if not the entire, part in the production of the disease, of course assisted by other factors favouring their activity.

These factors which combine to render the appendix more susceptible or less resistant to the inroads of micro-organisms than other parts of the intestinal tract are:— I. The precarious blood-supply; II. Retrogression of the appendix, indicating as it does defective resistant power; III. Defective drainage of the organ; IV. The relatively large amount of lymphoid tissue.

Finally, before leaving the pathology I should mention that I remember a case in which the inflamed appendix occupied the sac of a hernia, producing symptoms that were thought to be those of strangulation.

In mentioning the symptoms of appendicitis let me again draw your attention to what I have already stated when speaking of the pathological conditions of the

appendix—viz., that you will not always find it possible to arrive at any accurate conclusions as regards the pathological changes that are taking place in the appendix, from the symptoms usually manifested clinically. Increased severity of the symptoms may mean increased severity of the lesions in the appendix or peritoneum, but, on the other hand, remission of all symptoms except local tenderness may be met with while perforation or gangrene are taking place or have already taken place. This remission is due to blunted sensibility from toxic poisoning.

In acute appendicitis there are always three cardinal symptoms present—pain, tenderness, and rigidity of the abdomen, particularly over the region of the appendix. The pain, like that attending almost all acute lesions in the abdomen, is referred to the neighbourhood of the umbilicus, owing to the fact that the appendix derives its nerve-supply from the superior mesenteric plexus, consequently the pain will be referred to their situation, but later it becomes localised in the right iliac fossa. It is generally severe, and often follows the ingestion of indigestible food or a large meal. It is paroxysmal, and from the intensity of the paroxysms may double up the patient or induce prostration. Subsequently it becomes milder, but becomes continuous, and later on it may disappear; but this, instead of being a good sign, may be due to perforation or gangrene.

In relapsing cases the paroxysmal nature of the pain is not well marked; it is generally dull, boring and constant. The subsequent pain in acute cases may be referred to the thigh from irritation of the anterior crural nerve; to the bladder, causing painful and frequent urination, if the appendix hangs over the pelvic brim; to the testicle, causing its retraction, from irritation of the genito-crural nerve, thus it simulates renal colic; to the inguinal canal from irritation of the ilio-inguinal nerve; to the left iliac fossa if the appendix be directed in that direction or into the pelvis.

Tenderness on pressure is one of the most constant signs of appendicitis. It is never absent. The exact site

of its maximal intensity is shown as M'Burney's point, a point which you may take as about midway between the anterior superior iliac spine and the umbilicus. But, of course, this point must vary with the position of the appendix.

The tenderness when situated in the pelvis may be detected only on rectal or vaginal examination. If suppuration follows, the tenderness increases and its area becomes more extended. Other symptoms present are:—

*Vomiting*, which often occurs with the onset of the pain, and may continue or take place only once. When continuous the outlook is unfavourable.

*Constipation*, which is generally present, but the bowels may act regularly, or there may actually be diarrhœa, such as was present in one of the cases we recently saw in the wards.

When the initial pain is severe, the onset may be characterised by diarrhœa.

Persistent constipation is an unfavourable sign. The temperature varies much, and is a most unreliable guide to the prognosis. It has no relation to the severity of the lesion.

Similarly the pulse-rate in itself is not of very great moment, but its volume and regularity, and its rate proportionate to the temperature, are of great value as regards prognosis. The character of the pulse then is of more importance than the height of the temperature.

The rate of the respiration is usually of very slight importance, but it is said very rapid breathing is a sign of toxæmia, or is indicative of some pulmonary mischief.

Do not be led away by the idea that the development of a peri-appendicular abscess is indicated by a chill—nothing could be more fallacious. The occurrence of chills is more suggestive of pyæmia or abscess-formation, perhaps, in the liver.

In addition to the phenomena already mentioned, the patient suffering from acute appendicitis has an expression of great pain, lies on the right side, or with the right leg drawn up, and keeps perfectly quiet. Restlessness is a bad sign, as it is indicative of severe infection.

The examination by inspection may give a negative result, but in a certain number of cases there may be bulging over the right iliac fossa or even in the hypogastric area and extending upwards to the umbilicus. This swelling may be due to abscess or to inflammatory œdema. General distension of the abdomen may occur as the result of arrested intestinal peristalsis. Palpation in the early stages shows more acute tenderness over the site of the appendix; later, palpation may reveal a distinct tumour, and in some cases fluctuation may be elicited.

In some cases after an acute attack has passed off, and in chronic appendicitis one may be able to palpate the thickened and swollen, or it may be distended, organ.

Percussion is of no great importance. Abscess may be present with a tympanitic note, or a dull note may be elicited, and yet there may not be any pus.

With regard to the significance of leucocytosis, I cannot say much, but the opinion expressed by some surgeons is that a marked leucocytosis is indicative of pus formation.

*Diagnosis.*—Appendicitis must be distinguished from acute indigestion, lead colic, renal colic, biliary colic, intestinal obstruction, typhoid fever, gastric and duodenal perforations, especially the latter, on account of the escaping fluid quickly finding its way along the right kidney into the right iliac fossa; peri-nephritic abscess, acute inflammation of the ovary and tube, acute croupous pneumonia, psoas abscess, morbus coxæ, cystitis, &c.

In acute indigestion there is no localised pain or rigidity of the belly wall, and the symptoms soon subside. In lead colic the pain is not localised, the whole abdominal wall is rigid, the history and the presence of the blue line on the gums will clear up the diagnosis; moreover, pressure often gives relief. Renal colic will be distinguished by the absence of fever, by the presence of hæmaturia, and by retraction of the testicle, while the history may also be of importance.

In biliary colic the pain radiates backwards towards the scapula and upwards to the shoulder. Chills are present,



and jaundice may soon appear; furthermore, there is no rigidity of the right lower quadrant of the abdomen, and here again the history may be significant.

In intestinal obstruction the symptoms are generally more severe, the vomiting is more excessive, and later becomes stercoraceous. Constipation is generally absolute, and there is no fever, but, on the contrary, collapse may be present.

Typhoid fever should be recognised by the insidious onset, by the diarrhœa and characteristic stools, by the presence of rose spots, and by the course of the fever, while the "Widal test" may be employed.

Gastric and duodenal perforations should be suspected from the history of pain after eating for some time prior to the attack for which you are being consulted, from the history of hæmatemesis or melæna, and from the collapse.

Peri-nephritic abscess in some cases could be diagnosed only from the absence of any history which would point to appendix inflammation, because, as we have already seen, the abscess from an inflamed appendix may find its way up around the kidney.

In acute inflammation of the ovary and tube the rigidity is less extensive, and there may be the history of some disturbance of the uterine functions, while bi-manual examination, if necessary, under an anæsthetic will clear up the case.

**Acute Croupous Pneumonia.**—In this case the pain may be referred to the region of the appendix, but a careful examination of the patient, and a careful observance of the respirations, noting whether there is any alteration of the normal ratio between the pulse and respiration, will generally prevent you falling into the mistake of supposing the patient is suffering from appendicitis instead of pneumonia. I have been on one occasion sent for to see a patient supposed to be suffering from acute appendicitis, with a view to operating, but the patient was, on the other hand, suffering from acute pneumonia, from which he died next day. Needless to say his abdomen was not opened. Still we should not forget that both may be present at the same time. Appendicitis is more likely to

be mistaken by a superficial observer for pneumonia than the reverse.

In the case of psoas abscess there is generally some evidence of spinal disease, and the symptoms are not so acute.

In morbus coxæ the symptoms are seldom so acute, while there will not be any rigidity of the right lower quadrant of the abdomen, nor will there be any tenderness there.

In cystitis the history will be important, the urine will be altered, and there need not be any vomiting or fever at its onset, while examination per rectum will make the diagnosis tolerably easy. Last session you may remember a boy was sent in to hospital supposed to be suffering from cystitis of a very acute character, but a little inquiry and digital examination of the rectum made the diagnosis certain by feeling the tender inflammatory mass in the recto-vesical pouch. Of course you should remember again appendicitis may, indeed, be present at the same time as any of these conditions we have mentioned.

The prognosis should have reference to the attack itself, and also as to whether recurrence is likely to follow. Many cases, it is true, will recover from an attack. Indeed it is said as many as 90 per cent. recover without operation. The prognosis should never be based upon the severity of the onset, for often an attack begins very mildly, continues so for a few days, and then suddenly fulminating symptoms appear and leave the patient at death's door. On the other hand, an attack may begin severely, and in twenty-four hours subside, and leave the patient on the high road to recovery.

The mortality may, indeed, in mild cases be only 5 per cent., while in those in which abscess and gangrene occur the mortality rises to at least 50 per cent. At the onset, then, of any given attack no one could possibly say truly, "This case will end in resolution, abscess, or gangrene." Death has been known to occur in sixteen hours from the time the first symptoms appeared.

With regard to recurrence, one attack generally predisposes to another. I have read of a patient having had as many as 15 different attacks in one year.

*Treatment.*—The question of treatment would cease to be a difficult one if we could only infer the pathological condition of the appendix and of the structures in its neighbourhood from the clinical features presented by the cases. Who is there who would question the propriety of excising an ulcerated appendix with or without a contained concretion, or an appendix distended with pus or mucus? Who is there who would hesitate to operate on a patient whose appendix had just perforated or become gangrenous? Until, then, we can show a distinct relationship between the clinical phenomena and the pathological changes that are taking place the treatment will be a debateable one. To operate on every case of appendicitis as soon as recognised, provided, of course, the surroundings are all that could be desired—a procedure recommended by many of our American friends, but one which has not yet become quite so fashionable a craze on this side of the Atlantic—would be to operate on many cases unnecessarily. On the other hand, to wait for undoubted signs of perforation, abscess or gangrene, with their attendant septic peritonitis and other complications before operating, will be to doom to certain death many patients who, by a timely operative procedure of no great severity, would most undoubtedly have been saved. Looking at this question in another way, if the mortality, even in mild cases, is only 5 per cent., or all round as much as 10 per cent., and if the mortality attendant on operation, either between attacks or within a few hours after the onset, is only 1 per cent.—indeed, in the last 150 cases reported by one distinguished surgeon not a single death occurred; another surgeon reports 368 cases operated upon for recurrent attacks, operation being done either at onset of an attack or during interval between them, with but one death, less than one-third per cent. mortality—then it does not take much logic to arrive at the conclusion that operation in every case the moment the diagnosis is made, provided, of course, the surroundings are suitable, and a competent operator at hand, on the whole gives the best prospects, certainly diminishing the mortality by at least 4 per cent. in mild cases.

and surely obviating any recurrence. I believe, then, the sooner we operate on these cases the sooner the mortality, small though it may be without operation, will diminish or disappear. In case operation is not deemed advisable for some reason or other, or in case you prefer the expectant line of treatment, I should advise you to follow the treatment I will now mention, which is a slight modification of that recommended by Mr. Charters Symonds in the *Brit. Med. J.* for Feb., 1899. On seeing the patient directly after the onset, if the pain is severe, give just sufficient morphin hypodermically to relieve the patient's great suffering (one-sixth to one-quarter grain will be quite sufficient), apply hot fomentations, and, unless the attack is accompanied by diarrhœa, order one-grain of calomel to be given every hour until five grains are taken. Take accurate observations of the local and general condition. Pay a second visit in six hours—that is, when the effect of your dose of morphin will have passed off—and note carefully again the condition, both locally and generally, especially the nature of the pulse. If the bowels in the meantime have not acted give an enema. Should there be no increase in the severity of the symptoms, and if the state of the patient is generally satisfactory, you then wait for another six hours and see him for a third time, and so on. If, at the end of 36 hours, there is no amelioration of the symptoms and no improvement in the condition of the patient generally, in my opinion operation should be performed as soon as possible. Should any increase in the severity of the symptoms be detected before this, operation should be done at once. Should there be any sickness of the stomach present while paying these six-hourly visits give nothing by the mouth unless sips of hot water, otherwise a little peptonised milk or beef-tea may be given. Morphin should not be given as a routine line of treatment in these cases, and for the following reasons:—

I. It masks the symptoms without removing the cause of the trouble, and in this way may delude the medical attendant and the patient into the false hope that recovery is taking place, and that operation will be unnecessary.

II. It causes paralysis of the muscular coat of the bowel, in this way leading to retention of its contents. Decomposition then takes place, thus causing tympanites, the result of which is to crowd more and more of the intestines into the affected, and, it may be, infected, area. It may thus further favour the spread of sepsis throughout the peritoneal cavity.

III. It decreases the functional activity of the stomach, intestines, liver, kidneys, lungs and skin at a time when the elimination of all waste products is imperatively demanded.

When operation has to be undertaken for abscess, perforation, or gangrene, the question arises whether we should in these cases always search for and remove the appendix, thus performing the so-called "complete operation." In cases in which it does not present at once, and in those cases in which many adhesions are encountered, and in cases in which the patient's condition is one of great gravity where any prolonged operation may lead to disastrous results, I am of the opinion the appendix should be left to take care of itself. In the majority of cases it will do no further harm, while in the few cases in which fistulæ form and persist, or other trouble arises from leaving the appendix, you can proceed to remove it when the patient's condition is more suited to a prolonged and, it may be, dangerous procedure. On the other hand, if the appendix at once presents and is free of adhesions, or comparatively so, and if the patient's condition warrants it, it should certainly be removed. Those who advocate the "complete operation" do so on the ground that if the appendix is left in these cases, persistent fistulæ, subsequent attacks, dangerous and even fatal complications may arise. I am of the opinion, however, that if the "complete operation" be adopted as a general procedure the mortality as the result will far exceed that attendant directly upon the "incomplete method," plus that subsequently due to later complications that arise from leaving the appendix.

In chronic and relapsing cases the appendix should, of course, always be removed. The treatment subsequent

to operation in uncomplicated cases is merely that of the treatment after any other abdominal section. The treatment after operation in complicated cases, such as those already mentioned, consists in the administration of strychnin and stimulants freely. Morphin only if there is much pain and restlessness, otherwise avoid its use. Nothing by mouth but sips of hot water for the first few hours. Saline injections and nutrient enemata per rectum. The great thirst is best relieved by large saline injections, which, moreover, increase the eliminative activity of the kidneys. Get the bowels to act by purgative enemata if they have not been well cleared out before operation, while calomel gr. 1 every hour till 5 grs. are taken, or magnesium sulphate one drachm every hour in water until one ounce is taken, may be advantageously administered. This is one of the best means of preventing or relieving tympanites.

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THE LATE DR. J. E. KENNY, OF DUBLIN.

A movement has been set on foot to raise a suitable memorial to the memory of this warm-hearted and able physician, and for the purpose an influential committee has been formed to receive subscriptions and to determine what form the memorial should take. Among the members of the committee are the Presidents of the Royal Colleges of Physicians and Surgeons, Ireland, Dr. James Little, Sir Thornley Stoker, and Dr. J. P. Quinn, 15 Westland-row, Dublin, who acts as one of the Honorary Secretaries. The suggestion has been made that the memorial should take the form of a tasteful monument to be erected over Dr. Kenny's grave in Glasnevin Cemetery. Subscriptions in aid of the proposed memorial will be received at the Hibernian Bank, College-green, Dublin, or any of its branches, or by any member of the committee.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*Clinical Pathology of the Blood.* A Treatise on the General Principles and Special Applications of Hæmatology. By JAMES EWING, A.M., M.D. London: Henry Kimpton. 1901. Pp. 432.

THERE are few things more characteristic of modern medicine than the attention which is now given to examination of the blood in disease. The number of the corpuscles, the amount of colouring matter, the structure of the red and white cells as shown by the refined methods of microscopic technique now employed, the osmotic properties of the plasma and corpuscles, the specific gravity, the alkalescence; all these are now subjects of examination, and many conclusions have been drawn, we cannot but think, of very varying value, from these investigations.

To anyone engaging in such researches (and every practitioner must engage in them more or less) this work of Dr. Ewing will be found invaluable. It gives nearly all that is known or conjectured on the subject of the blood changes in disease up to the present date, and contains much original work besides summarising and criticising the work of others.

In the first part of the volume, on the Physiology and Pathology of the Blood, we find chapters on technique in which all the methods of examination are fully and clearly described; on the Chemistry, including specific gravity and osmotic tension; on the Morphology and Physiology of the Red Cells; on the Leucocytes and Leucocytosis, in which the import not only of leucocytosis in general, but of the different varieties of leucocytes is discussed; and on the Development of Blood Cells. As regards the much vexed question of the nature and origin of the so-called

platelets the author inclines to the view that they are not cells but detritus of cells or of plasma. He thinks that modern research has "placed beyond doubt the opinion that the chief source of blood plates is by the extrusion from red cells of masses or chains of globular material, which give many of the reactions of the nucleo-proteids." He says this appearance can be seen in almost every dry specimen stained with methylene blue.

The second part deals with the Special Pathology of the Blood, and contains chapters treating of chlorosis, progressive pernicious anæmia, leukæmia, pseudo-leukæmia, and anæmia infantum pseudo-leukæmica.

As to the causes of chlorosis the author concludes that it is a specific form of essential anæmia, resulting from several factors, of which the two most important and invariably present are—(1) a predisposition to the disease, and (2) defective absorption of iron from the food. The disease results "from a functional insufficiency of the bone marrow, brought about in congenitally predisposed subjects by a series of conditions most often combined in young women at puberty."

Much difference of opinion exists as to what we are to call progressive pernicious anæmia. Dr. Ewing holds that "we must accept the opinion that when the blood contains megaloblasts and a considerable proportion of megalocytes with increased hæmoglobin, while the lymphoid marrow shows marked hyperplasia of peculiar type, the condition should be called progressive pernicious anæmia, without regard to its immediate exciting cause." While these causes are generally obscure, many cases may be referred to intestinal intoxication. *Bothriocephalus latus*, and, possibly, other intestinal parasites, repeated hæmorrhages, malaria, syphilis, diarrhœa, and bad hygienic conditions may be looked on as causes, while pregnancy has no specific influence.

The cases regarded as pseudo-leukæmia, or Hodgkin's disease, "pass by insensible gradations at one point into the inflammatory hyperplasias of lymph nodes, at another into true lympho-sarcomata, and at another into lymphatic leukæmia. Lymphatic leukæmia, pseudo-leukæmia, and



lympho-sarcoma appear to form a single group possibly connected by some common ætiological factor.

The third part deals with the blood in acute infectious diseases. In speaking of the diagnostic value of Widal's reaction in typhoid fever Dr. Ewing holds that absolute certainty cannot be ascribed to any test unless the dilution is as great as 1 in 60, and the time is restricted to 15-30 minutes. A positive result with dilution of 1 in 30 gives almost certain evidence. These results are, however, got only at the height of the disease, and are useful in distinguishing certain conditions, such as acute gastritis, tuberculosis, meningitis, and pneumonia, which may simulate typhoid fever. For the early diagnosis of typhoid fever Widal's test is usually disappointing, but it is believed "that the combination of an indistinct serum reaction, diminution of fibrin, absence of leucocytosis, and presence of relative or absolute lymphocytosis can almost never be demonstrated in the early stages of any obscure febrile disease except typhoid fever." Negative results with Widal have very slight importance until the third or fourth week and unless frequently repeated, while some reported cases, often fatal, have failed at any time to yield the reaction.

The fourth part describes the condition of the blood in constitutional diseases. In the chapter on diabetes no mention is made of the abnormal staining of the red corpuscles described by Bremer and Williamson, but these changes are given in the first sections of the work which deal with the technique.

The author expresses himself with great caution on the subject of the causation of uræmia. He thinks that the weight of evidence is in favour of an auto-intoxication by the poisonous substances isolated by Bouchard and others from the urine, but that a strong objection to this theory consists in the fact that uræmic attacks frequently arise at periods when the excretion of urine is much improved.

In malignant tumours "the relatively greater frequency and extent of leucocytosis in sarcoma appears to be the most striking difference in the blood" between it and carcinoma. "Indeed, there are several recorded instances

in which the lymphocytosis of sarcoma terminated in lymphatic leukæmia."

A long and important chapter is devoted to Malaria, in which the different parasites are fully described and figured. Many interesting observations will there be found, including a description of the conjugation of the malarial parasite observed by the author in 1897.

A most valuable feature in this work is the bibliographical list of writings appended to each chapter. The text is abundantly illustrated by engravings and coloured plates from original drawings. These are always demonstrative, although they appear to us to be sometimes a little schematic.

Although the author does not touch the treatment of the various abnormal conditions he describes, his work scarcely loses in value on that account when we consider the present condition of blood therapeutics. The book will be found a mine of information, and indeed will prove indispensable to anyone investigating blood changes in disease.

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*Studies in Heterogenesis.* By H. CHARLTON BASTIAN, M.A., M.D., F.R.S. First Part. Williams and Norgate. 1901. Pp. 61, x.

IN this work Dr. Bastian returns to the subject of his book on "The Beginnings of Life," published in 1872.

He defines Heterogenesis "as the production from the substance of organisms or their germs of alien forms of life"—the processes by which living things arise from the matter of pre-existing organisms belonging to a totally different species, as distinguished from Homogenesis, or the processes by which individuals arise in the ordinary way from pre-existing living things similar to themselves in organisation.

He describes a long series of observations in which the process of Heterogenesis has been studied. These are divided into three sections:—

I. Transformation of the contents of confervoid and

other vegetal cells and organisms into Amœbæ, Actinophrys, Monads, Peranemata, or Monad Cysts.

II. Transformation of the substance of certain encysted ciliates into Peranemata, Embryo Amœbæ, or Flagellate Monads.

III. Transformation of the substance of the eggs of certain Rotifers into Peranemata, Flagellate Monads, Amœbæ, Monad Cysts, Primitive Fungoid Sporangia, or Ciliated Infusoria.

The observations seem to have been made in the most conscientious and painstaking manner, and the appearances seen are figured in 210 reproductions of photo-micrographs.

The author holds that "the appearances recorded and displayed in the present memoir are only capable of receiving one or other of three interpretations—(1) It may be said that the forms of life here described, which seem to take origin from the substance of other organisms or their germs, are not alien organisms, but normal stages in the life history of the present forms; (2) That the resulting forms of life are due to the invasion and multiplication of parasites within what appear to be the parent organisms; (3) That the resulting forms of life are, in reality, heterogenetic products originating from the very substance of the organisms or of the germs from which they proceed."

He believes that the first explanation is inadmissible in the case of the objects here studied, and holds decidedly to the third possibility as affording the true explanation of what he has observed.

Interesting observations are recorded of the effects of ordinary light and of Röntgen rays in influencing the heterogenetic processes.

It is believed that several very puzzling phenomena will be explained readily by the supposed common occurrence of heterogenesis, such as the existence of lowest organisms at the present time, which, on ordinary theories, ought to have evolved before now into higher forms; the occurrence of what Huxley called "persistent types" of life, the remains of which are to be met with not only in successive

geological strata, but in those whose formation has often been separated by vast periods of time; and the wide distribution over the earth of similar lowest types of life. Further, Dr. Bastian thinks that the occurrence of heterogenesis furnishes the strongest proof of the theory of evolution, and his observations agree with some others which show that even in some of the higher forms of life the origin of new species may occur by sudden mutations rather than by the cumulation of minute progressive variations; while, "if, instead of believing with Darwin that 'all living forms of life are the *lineal* descendants of those that lived long before the Cambrian Epoch,' and 'that all the organic beings which have ever lived on this earth may be descended from one primordial form,' it should be admitted that life originally started from multitudes of centres (as the uniformity of natural phenomena would demand); that from the earliest stages of the earth's history up to the present time new starting points of simplest forms (by heterogenesis) have been ever taking place all over the surface of the earth, we may see, not only how many of the facts concerning 'persistent types' may be explained, but also how the time needed for the whole evolution of life upon the globe may have been far less prolonged than biologists have hitherto supposed."

This essay is one of vast importance, and it will take time and prolonged observation to decide as to the truth or fallacy of the conclusions arrived at by the author. In the meantime we cannot but admire the painstaking and laborious character of Dr. Bastian's work, and look forward with interest to the further observations which he promises to publish.

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*The Morphia Habit.* By OSCAR JENNINGS, M.D. (Paris).  
Second Edition. Crown 8vo. London: Baillière,  
Tindall and Cox. 1901. Pp. 210.

THIS little book is not, as the title on the cover would lead one to believe, a treatise on Morphinomania in general, but rather on the treatment for the cure of that habit as carried out by Dr. Jennings. The title-page reads—"On

the Cure of the Morphia Habit without Suffering," and this is summed up in, what the author calls, "the therapeutic triad"—viz., heart tonics, bicarbonate of sodium, and hot-air baths.

On page 1—"In 1890 I published a little book on the Morphia habit. . . . I have no hesitation in declaring that before this there was no rational treatment of the morphia craving founded upon therapeutic indications. . . . The so-called 'methods' described by contemporary writers consisted of suppressing the morphia suddenly, slowly, or semi-brusquely, but failure was always the final result." This not unpretentious introduction urges one to hasten forward to discover the therapeutic elixirs, which do away with "the so-called methods of contemporary writers," but on page 50 we read—"Starting from the fact that it is possible, without any other treatment whatever, to wean a person of the morphia habit without his knowledge by a sufficiently slow progressive reduction, it is evident the slower the reduction the less distressing is likely to be the craving. The plan I have adopted is to proceed as fast as possible, but *as slowly as is necessary, to effect a cure without distress.*" (The italics are the author's.) "When the patient is perfectly docile, allowing his mode of life to be so arranged that all increasing causes of the craving are eliminated, the residual craving is reduced to its simplest expression, and can be so alleviated by the means I use that suppression can sometimes be obtained in ten days or a fortnight." Turning now to page 115, *et seq.*, we see Case I., which is described, page 118, "As near as possible to a typical case." . . . "I have seen no other patient in whom there was so entire an absence of discomfort, and so perfectly regular a weaning." . . . "In no other case have I met with anything like the docility that was shown by this patient." Now, as far as can be made out, taking the reductions mentioned as uninterrupted daily reductions on the basis of the table given on page 102, this patient required 34 days at least to dispense with the syringe, allowing nothing for rectal substitution and after treatment. We read also that "no medicines besides sparteine, bicarbonate, valeria-

nate, and coca were used *at any time*," but in the next line we read that he took "3 cubic centimetres of Duquesnel's meco-narceine solution, and the only drug he had taken on leaving me was trional."

It is confusing to read, often on the same page, the same drug spoken of in grains and centigrammes—*e.g.*, page 117, &c.

There are copies of a number of letters from Morphinists with the usual floral verbiage, protestations, promises, and profuse thanks.

The cure, however, seems still to require the "so-called methods" of gradual reduction, as a basis for the "therapeutic triad" to rest upon.

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*Journal of Medical Research.* Continuation of the Journal of the Boston Society of Medical Science. Edited by HAROLD C. ERNST, M.D. New Series. Vol. I., Part 1. July, 1901. Boston. Pp. 298.

WE would direct the attention of our readers to this Journal, which, if we may judge from the number before us, must take a high place in the periodical literature of the new century. It is devoted, we are told by the editor, to the prompt publication of original investigations in medicine. It is to be published irregularly, but as fast as matter accumulates. It has, among other sources of strength, the support of the American Association of Pathologists and Bacteriologists, and the Boston Society of Medical Sciences, and the support already promised appears to leave no doubt as to its success. The subscription price for each volume—of about 500 pages—is four dollars. In the present number twenty-eight papers are contained, most of which were read at the annual meeting of the American Society of Pathologists and Bacteriologists, held last April. The papers are for the most part of considerable value, and deal with subjects which are at present exciting interest and discussion among pathologists and practitioners. The variety of subjects dealt with will be apparent from an enumeration of the titles of a few of the papers:—A Contribution to the Normal Histo-

logy and Pathology of the Hæmolymp Glands, by Dr. A. S. Warthing; Transplantation of Tumours, by L. Loeb; Report upon the Examination by Nissl's Method of Four Gasserian Ganglia removed for Tic Douloureux, by B. Bailey; The Frequency of Trichinosis in the United States, by H. U. Williams; Suppurative Pylephlebitis, associated with Anærobic Micro-organisms, by C. Norris; Origin of Gas and Gas Cysts of the Central Nervous System, by W. T. Howard; A Study of the Variations in Virulence of Bacillus Tuberculosis in Man, by A. J. Lartigan; Primary Endothelioma of Lung and Pleura, by J. Adler; Studies upon Bacteriolysis and Typhoid Immunity, by M. W. Richardson; Malta Fever, by J. J. Curry; Some Undescribed Lesions in Lympho-sarcomatosis (Hodgkin's disease), by C. F. Martin; Necrosis of Liver, by F. B. Mallory; Nine Cases of Infection with Bacillus Pyocyaneus, by R. G. Perkins. Many of the papers are illustrated by well-executed plates, some of which are in colours. Altogether the volume contains a splendid record of original work, and the Journal has our best wishes for its continued success.

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*Introduction to the Study of Medicine.* By G. H. ROGER, Professor Extraordinary in the Faculty of Medicine of Paris; Member of the Biological Society; Physician to the Hospital of Porte-D'Aubervilliers. Authorised Translation by M. S. GABRIEL, M.D. With additions by the Author. London: Henry Kimpton. 1901.

IN this portly and well-printed octavo of 545 pages the student is furnished with a very excellent introduction to the labyrinthine highways and byways of the theory and practice of medicine. We have particularly noted the rare combination of having in the same volume scientific modern theory presented thoroughly up to date and clinical observation of the patient fully appreciated. The author tells us of his own plan: "I have endeavoured to show what is the object of medicine, and by what means it may be studied. After having explained why and how an individual becomes sick, I have considered the morbidic

causes which constantly tend to modify the unstable state of health." We specially honour him for the declaration: "I cannot admit abdication of clinical methods of investigation before the rising tide of bacteriology." Still he does full justice to the importance of the existence of these much-libelled parasites in the blood and tissues of the various forms of disease. The chapters which deal with disturbances of nutrition impressed us as peculiarly instructive reading. Over two hundred pages are devoted to "Examination of the Sick," and we do not think that a word or sentence is wasted throughout. The trend of thought is characterised by thorough Gallic translucency, and the translator deserves the highest credit for having successfully represented this quality of his author in his foreign garb. Indeed, this power seems to us to be a peculiar gift of our trans-Atlantic confrères. We most cordially and confidently recommend this volume to the attention of students and practitioners of medicine, as the best of its kind with which we are acquainted.

*A Practical Guide to the Administration of Anæsthetics.*

By R. J. PROBYN-WILLIAMS, M.D.; Senior Anæsthetist and Instructor in Anæsthetics at the London Hospital; Lecturer on Anæsthetics at the London Hospital Medical College; Assistant Anæsthetist at the Dental Hospital of London: London, New York and Bombay: Longmans, Green & Co. 1901.

THIS little text-book is intended for medical students, and it meets all their wants. It is didactic, and we think rightly so. Of course, he follows the London teaching throughout: chloroform is more dangerous than ether; its lethal effects are produced through its action on the circulatory system. These are but the shibboleths of the school; they take no note of the exhaustive "cross-current" experiments of Lawrie, or of his recent book on chloroform. We do not propose entering on disputatious matter, but we regret to find that in such a great teaching centre of medical science as London men cannot free their minds of bias and look at the experience of the world



before allowing their views to become crystallised into a rigid *non possumus*.

Throughout the book the author spells anæsthesia with the separate vowels "a e," not using the "æ" diphthong. In this he follows the French fashion. We cannot, however, see any advantage in the change.

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*A Text-book of Medicine for Students and Practitioners.*

By DR. ADOLF STRÜMPELL, Professor and Director of the Medical Clinique at the University of Erlangen. Third American Edition. Translated, by permission, from the Thirteenth German Edition, by HERMAN F. VICKERY, A.B., M.D., and PHILIP COOMBS KNAPP, A.M., M.D. With Editorial Notes by FREDERICK C. SHATTUCK, A.M., M.D. With One Hundred and Eighty-Five Illustrations in the Text, and one Plate. London: H. K. Lewis. 1901. 8vo. Pp. 1,242.

THE second edition of the American translation of this work was published in 1893. Since that date no fewer than seven editions have appeared in Germany, or at the rate of an edition every year. This statement will give an idea of the popularity of Professor Strümpell's great clinical treatise. It has become a work of reference among the English-speaking peoples of the world as well as in the German "Vaterland."

It is a curious thing—viewed in the light of recent medical history—that Professor Strümpell should not have written an account of Plague. This omission has been supplied by Dr. Herman F. Vickery in a short but readable article at pages 107 to 111 inclusive. In a footnote to the preface the author refers with pardonable pride to the gratifying fact that translations of his text-book have appeared in French, English, Italian, Spanish, Russian, Modern Greek, Turkish and Japanese. Some of these translations, also, have passed through several editions. These facts testify to the usefulness of the work, which has been written with all the methodical thoroughness of the German School.

The author states that large portions of the book have

been almost completely re-written—notably the sections on Diseases of the Stomach, Gall-stones, and Intestinal Parasites. If we were to particularise any part of the work as excelling in merit, we would name that which treats of Diseases of the Nervous System. It runs to upwards of 400 pages, and makes up one-third of the whole volume. Also, it is much better illustrated than any other part of the work. Indeed, it is in this matter of illustration that we think the chief defect in Strümpell's Text-book lies. The portraits, however, of nervous diseases are of a high order of merit, and elucidate the subject in a way which even the author's admirable description would of itself fail to do.

Dr. Shattuck's editorial notes will be read with interest, and both he and the translators—Drs. Vickery and Coombs Knapp—have acquitted themselves well in the fulfilment of their respective tasks.

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*Guy's Hospital Reports.* Vol. LV. London: J. & A. Churchill. 1901. Pp. xlviii., 285.

As usual these Reports afford interesting reading. Dr. Hale White records a case of cerebral tumour in which the skull was opened four times for the relief of headache and blindness—always with good effect, the relief being most prolonged after the last operation.

Dr. Beddard contributes a practical and helpful article on transfusion and venesection. The author believes that transfusion, intravenous, subcutaneous, and rectal, is not used as much as it deserves from want of appreciation of the enormous importance of keeping the quantity of fluid in the circulation up to the normal. He warns that transfusion often aggravates circulatory failure, and so should not be used ignorantly and indiscriminately. In case of hæmorrhage at least as much fluid as blood has been lost should be transfused. If there is collapse due to loss of fluid as opposed to blood—as after severe scalds—repeated transfusions may be necessary, rising of the specific gravity of the blood being the indication.

E. W. H. Menton has a clearly-written and well-illustrated article on the setting-up and working of an X-ray installation. He advises simple apparatus of the best quality.

Dr. J. H. Bryan deals with functional pulmonary incompetence, and incompetence of the pulmonary arteries, as complications of mitral stenosis. This dilatation was first described by Adams in the Dublin Hospital Reports of 1827. Dr. Bryan maintains (against the ordinary textbook teaching) that in nearly 90 per cent. of cases the early diastolic bruit indicative of aortic regurgitation is best heard in the third *left* intercostal space, close to the left border of the sternum.

Dr. Stevens reports on the radical operations for uterine cancer in Guy's Hospital for 1886 to 1899. Of 102 cases 31 died of recurrence of growth at variable times after the operation. Sixteen cases were alive at the time of writing the article. In these cases the period since the operation varied from two to eleven years. As is inevitable, the after history of many of the cases was impossible to trace.

Another volume is promised before the end of the year.

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*Rhinology, Laryngology and Otology, and their Significance in General Medicine.* By E. P. FRIEDRICH, M.D. Edited by H. HOLBROOK CURTIS, M.D. Philadelphia and London: W. B. Saunders & Co. 1900. 8vo. Pp. 348.

THIS work has and will receive, it may be confidently asserted, widespread support and recognition from the medical public. Not alone will the specialist read it carefully, but the busy general practitioner will often refer to it to elucidate some unusual and unexpected symptom. Nothing but praise can be bestowed on such a volume. Its conciseness is remarkable. The author has, as he himself says in the preface, avoided all doubtful theories and confined his labours to bringing together as much solid material as he could collect from the general and special

literature. In this all must admit that he has been most successful, and we have in this book a mass of useful information condensed into a workable size.

The chapters devoted to the consideration of the relation between the chronic general diseases, such as kidney affections, will be of special use to those who confine themselves to these branches, while the consideration of the portions of the work on the acute and infectious diseases will prove of most benefit to the family physician.

It is divided into chapters with such headings as Diseases of the Respiratory Organs, Diseases of the Blood, Intoxications, and Nervous Diseases, &c., and the above may be taken as indicating the general idea and scope of the work.

Bibliographical notes are appended, and will prove most useful in helping the student to find literature on any subject in which he may be interested, as when compiling references for a paper.

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*Elements of Practical Medicine.* By ALFRED H. CARTER, M.D., M.Sc.; Fellow of the Royal College of Physicians, London; Professor of Medicine, University of Birmingham; Senior Physician to the Queen's Hospital, Birmingham; Emeritus Professor of Physiology, Queen's College, Birmingham; Consulting Physician to the Corbett Hospital, Stourbridge, the Bromsgrove Hospital, and the Smallwood Hospital, Redditch, &c. Eighth Edition. London: H. K. Lewis. 1901.

THE fact that a text-book of medicine has reached its eighth edition within twenty years is the best proof that we know of that it originally supplied a distinct want, and that it has continued to supply it faithfully and well. The author may well congratulate himself on the continuance of the sunshine of popular favour on his book. As he tells us in the preface to the present issue, he has "taken considerable pains to make it more worthy of the gratifying support which the book has continuously received since its first issue, some twenty years ago." The whole of the text has been carefully revised, and large

portions have been re-written, in order to bring it up to modern requirements. And the object of his labours has been attained. We confidently foretell for this volume the popularity of its predecessors. The section on Diseases of the Skin has been contributed by Dr. Emery instead of Mr. Malcolm Morris as formerly. Dr. Carter has chosen a thoroughly efficient substitute; the item is worthy of the setting in which it appears.

This edition is affectionately inscribed to the memory of the author's father, who was himself a distinguished member of our profession. Further introduction of a work so well and favourably known as this is entirely unnecessary—indeed, might be regarded as presumptuous. As we have already said, we confidently foretell the continuance of its well-deserved popularity.

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*A Manual of Minor Surgery and Bandaging.* For the Use of House-Surgeons, Dressers, and Junior Practitioners. By CHRISTOPHER HEATH, F.R.C.S., LL.D.; Consulting Surgeon to University College Hospital, and Emeritus Professor of Clinical Surgery in University College, London. Twelfth Edition. Revised by BILTON POLLARD, F.R.C.S.; Surgeon to University College Hospital and Teacher of Operative Surgery in University College, London. London: J. & A. Churchill. 1901.

THE author tells us in his preface that—"Having retired from the active duties of a hospital surgeon, I have thought it right to entrust the preparation of a twelfth edition of this book to my colleague and former house-surgeon, Mr. Bilton Pollard, whose acquaintance with the requirements of modern surgery is necessarily greater than my own. I hope that in this way the continued usefulness of a guide which has enjoyed an existence of over forty years will be secured." And we have no doubt that this earnestly-expressed hope of a true benefactor of his profession and of mankind at large will be fully justified.

We congratulate the venerable author on the pheno-

menal success of a manual which has throughout this long period of years proved a veritable boon to the classes for whose use it was specially intended. We also congratulate him on his successful choice of an editor, who appears to us to have left nothing to be desired in the fulfilment of his special function. And, while wishing him a cordial good-bye for the present, we congratulate ourselves on the fact that the author's devotion to his profession has effectively prevented him from allowing his interest in its teaching to grow cool. We only venture, in conclusion, to earnestly express the hope that he may long enjoy in retirement the rest and happiness to which the meritorious activity of his professional career entitle him.

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*A Treatise on Orthopædic Surgery.* By ROYAL WHITMAN, M.D., Instructor in Orthopædic Surgery, and Chief of the Orthopædic Department of the Vanderbilt Clinic in the College of Physicians and Surgeons of Columbia University; Adjunct Professor of Orthopædic Surgery in the New York Polyclinic; Assistant Surgeon and Chief of Clinic at the Hospital for Ruptured and Crippled; Orthopædic Surgeon to the Hospital of St. John's Guild; Member of the Royal College of Surgeons of England; Member and sometime President of the American Orthopædic Association; Corresponding Member of the British Orthopædic Society; Member of the New York Surgical Society, &c. Illustrated with 447 Engravings. London: Henry Kimpton. 1901.

THIS portly octavo of xii. and 650 pages is one of the handsomest professional text-books with which we are acquainted. The binding is in the best taste of chaste simplicity; the paper is superb; the type is artistically formed and exquisitely clear; the illustrations are profusely scattered throughout the text, are admirably adapted to its elucidation, and are executed with the most enjoyable clearness. Take it for all in all, we have not seen the equal of this volume on the special subject of which its author is so thorough a master and so brilliant an exponent. Here and there, of course, we meet with a

sentence or paragraph which explodes the idea of infallibility which we had just been forming to ourselves. For instance, on page 496—under the head of “The Movements of the Foot”—we are told that “The junction between the foot and the leg is made by means of the astragalus, a bone which is not intimately connected with either part, since it moves upon the leg and upon the foot, and to it no muscles are attached.” This sentence forcibly suggests the idea that the author has not, in recent times, made a careful examination of the ligamentous connections of the astragalus and os calcis.

But slips of this kind are rare in the very splendid volume before us, which we cordially recommend to the best attention of all our surgical readers.

*Internationale Sehprobentafel für Kinder.* Von DR. ERNST HEIMANN. Berlin, W. 1901. Fischer's medicinische Buchhandlung. H. Kornfeld.

THESE sight-tests consist of a series of silhouetted hands, with the index finger out (as on a sign board); these are of various sizes, and the young examinee is to indicate with its own finger the direction of the finger on the test-card.

The designer of these sight-tests for children has had two aims in view; first, to make the act of thought, which is closely connected with the act of seeing in every testing of the faculty of vision, as simple and easy as possible; and secondly, to enable the physician to test the sight in such a manner that the child, who is naturally bashful and reserved on such an occasion, need not speak.

The hands, though not artistically meritorious, are likely to prove of advantage in many cases where the letters are impossible to use.

*International Directory of Laryngologists and Otologists.* Compiled by RICHARD LAKE, F.R.C.S. London: Rebman, Limited. 1901.

THIS little book fills a long-felt want, and enables one in a moment to find the address, &c., of any given person. It

is arranged according to countries, and the names are listed under the towns, with the address and what branch the particular individual practises. An index of the names enables easy reference to be made. While one notices a few names absent, the book on the whole is very complete, and the omissions are the fault of the individual rather than of the compiler. The book has now reached its second edition.

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RECENT WORKS ON DISEASES OF CHILDREN.

1. *Manual of the Diseases of Children.* By JOHN MADISON TAYLOR, A.M., M.D., Professor of Diseases of Children, Philadelphia Polyclinic, &c., Fellow of the Royal College of Physicians of Philadelphia, &c.; and WILLIAM H. WELLS, M.D., &c., &c., Philadelphia. Second Edition, revised and enlarged. London: Henry Kimpton. 1901.
  2. *Diseases of the Digestive Organs in Infancy and Childhood, with Chapters on the Diet and General Management of Children, and Massage in Pediatrics.* By LOUIS STARR, M.D.; late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Third Edition, re-written and enlarged. London: Rebman, Ltd. 1901.
  3. *The Care and Feeding of Children.* A Catechism for the Use of Mothers and Children's Nurses. By EMMETT HOLT, M.D.; Professor of Diseases of Children in the New York Polyclinic, &c., &c. Second Edition. London: Henry Kimpton. 1901.
  4. *Golden Rules for Diseases of Children.* By GEORGE CARPENTER, M.D. (Lond.), M.R.C.P.; Physician to the Evelina Hospital for Sick Children. "Golden Rules" Series, No. XI. Bristol: John Wright & Co. 1901.
1. This book has been so much improved that one scarcely recognises its relation to the first edition, published in 1899. It presents a fine appearance, and is well turned out by the publishers. There is much to be admired in it, and in those departments where good work has been done by



American physicians we can turn with profit to its pages. The Diseases of the New-born have been well handled, and such chapters as those on "Feeding" and "Stomatitis" are decidedly good. We observe, however, many parts of the volume which are distinctly behind our present knowledge. For instance, why have we no description of "Thrombosis of the Cerebral Sinuses," common in wasting diseases of infants; "Varicella Gangrænosa;" "Idioglossia;" "Functional Ataxies," which entirely disappear; "Rheumatoid Arthritis;" "Enema Rashes" (such interesting and peculiar phenomena); "Tabes Mesenterica;" "Tubercular Ulceration of the Bowels;" "Purpura Fulminans" of Henoch, so very fatal; "Achondroplasia?" In so large a volume we are disappointed at no information being obtainable on these ailments which are essentially children's diseases and extremely important.

"Posterior Basal Meningitis" is feebly handled. In "Marasmus" no mention is made of the able work of Baginsky and Soltau Fenwick. We think these chapters should be fully supplied in the next edition. The binding, paper, and index are most admirable, the last especially being splendidly compiled.

2. Dr. Starr's Manual deals comprehensively with the general management and feeding of children, and the special requirements of weak and immature infants, massage, &c., in addition to the special diet diseases and food disorders.

The delicate subject of "humanising" cows' milk is put before the reader, with the risks of farinaceous and patent foods. Milk laboratories are described, and substitutes given where for any reason milk must be withheld. To Massage is assigned a special chapter.

"Marasmus," or "Simple Atrophy," is poorly treated, considering it is the most frequent cause of death in children (in the British Islands). Dr. Starr rightly states that these cases "waste because they are starved—undiluted cows' milk, or thickened with starchy materials, farinaceous foods, and even table foods (meat, vegetables, and bread) are given to infants a few weeks or months old,"

and "as the infant cannot assimilate them he starves no less surely, if more slowly, than when taking no food at all."

We sorely miss the morbid anatomy of marasmus. Five lines only are devoted to it! After the researches of Soltau Fenwick and others, and notably Baginsky, more would have been welcome from Dr. Starr in a manual of this kind.

He deals briefly with the "Hydrocephaloid" condition. There is an extremely valuable contribution on "Infantile Scurvy," in the pathology of which the American school has taken such a leading part. It purely arises from faulty foods—essentially from "*the continued deprivation of fresh food.*" And in the order of malignant potency these foods are thus classed by Professor Starr:—(1) Patent infants' food without cows' milk; (2) Patent foods along with cows' milk; (3) Farinaceous foods (*e.g.*, oatmeal, cornflour, arrowroot, &c.); (4) Condensed milk and water; (5) Sterilised milk; (6) Too dilute milk and cream mixtures.

Dr. Starr points out that these groups explain the frequency of scurvy amongst the children of the rich. Patent foods are expensive, and can be little used by the poor, who also find the "Humanising" of cows' milk troublesome. The child of poverty is hence fed by them upon milk, tea, potatoes, bread and adult table foods. A bad diet! But although it produces rickets, marasmus, and diarrhœal diseases, it is too varied and fresh to produce scurvy. On the other hand, the rich man's child fed on these expensive patent foods becomes the subject of this interesting disease. Similarly, the varied diet after the second year explains its absence in older children.

There is a good description of rickets. In treating of "Stomatitis" Dr. Starr wisely adopts the classification of Dr. Forchheimer of Philadelphia. This is an admirable chapter. In the chapter on "Mucous Disease" a plate in illustration is wrongly inserted by the publisher in another part of the volume. We observe Dr. Starr has not yet given up "lancing the gums" in the dentition troubles of infancy. English physicians are now of opinion that most of the troubles of the dentition period

are due to faulty feeding. Diarrhœal diseases are well handled. We think the division of the book into chapters has been badly accomplished. The portion on "Abdominal Tuberculosis" and "Tabes Mesenterica" is extremely short. There is a capital index.

Readers will find the cream of the book in the introduction on "Feeding of Infants," on which the author is so high an authority; while the chapters on "Scurvy" and "Stomatitis" are quite excellent.

3. This is a simple, but sound and practical catechism on the Care and Feeding of Children, intended originally for use in the Practical Training School for Children's Nurses in New York—a most useful institution.

After three years it has reached a second edition, and will be distinctly useful to all nurses. It deals only, as it rightly should, with healthy children—no prescriptions or diseases being discussed. Whether a catechism is the most useful means of imparting knowledge is a debateable question, but the information in the answers is admirable. We much prefer subjects treated in a clearer light than question and answer, and this excellent material might well have appeared in a more simple form. For instance:—"What is Formula III.?" Answer: "Fat 3 per cent., sugar 6 per cent.; proteids 1 per cent." "How is this obtained?" Answer: "By diluting the primary formula (12 per cent. milk) three times with the solution of milk and sugar."

These are conundrums which few nurses will trouble themselves to solve when about to feed infants under three months.

The diet of children is, on the whole, well handled, and many useful hints may be gathered from its perusal. Dr. Emmett Holt has put this most important subject in a fresh light, and it may in this form rivet the attention of some readers to whom continuous prose might be a labour.

4. One must sympathise with the author of so condensed a booklet as one of this series must be. To write a *Practice of Medicine on Children's Diseases* which will

fit into the waistcoat pocket is a task requiring a large amount of tact and skill, apart from thorough knowledge of the subject. We think Dr. Carpenter has, on the whole, turned out a pocket guide which will be of use to busy practitioners, and bring before his readers some thoughtful suggestions under many of the headings.

It is a pocket index of diseases with short explanatory notes on diagnosis and some suggestions on treatment. These are so brief, however, one should possess a thorough knowledge of the subject before these notes would be of use.

A little room still remains which could be usefully filled with short allusions and explanations of some other special diseases of children which are in this volume omitted. We hope if Dr. Carpenter issues a second edition he will insert paragraphs upon *Tabes Mesenterica* (already mentioned under *Tubercular Peritonitis*), *Tubercular Ulceration of the Bowels*, *Idioglossia*, *Habit Spasms*, *Purpura Fulminans*, *Friedrich's Disease*, *Thrombosis of the Cerebral Sinuses*, and *Achondroplasia*. The author is greatly cramped for space by his publishers, but the inclusion of these which deserve special notice in a book on children's diseases would enhance the value of the work. Furthermore, we think the arrangement should be strictly alphabetical throughout.

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*Practical Surgery.* For the General Practitioner. By NICHOLAS SENN, M.D., Ph.D., LL.D.; Professor of Surgery, Rush Medical College, in affiliation with the University of Chicago; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief St. Joseph's Hospital; Professorial Lecturer on Military Surgery, University of Chicago; Surgeon-General to the State of Illinois. With 650 Illustrations, many of them in Colours. London and Philadelphia: W. B. Saunders. 1901. Pp. 1,153.

THIS volume, Professor Senn tells us, is not intended to cover the whole field of surgery. Its contents are devoted

to those sections of surgery that are of especial interest to the general practitioner.

For a review on such a large work to appear in such a short period after its issue from the press means either that the book is not worth the reviewer's trouble of reading it, or that it is so fascinating and full of interest that he does not care to take up anything else until he has perused its last page. This latter was the position in which we found ourselves immediately we started reading the book. Every page is full of interest, and each successive chapter seems to contain more of practical importance to the surgeon than its predecessor.

The earlier chapters are devoted to such subjects as—Emergency and Military Surgery, Traumatic Shock, General Anæsthesia, Prophylactic Hæmorrhage, Treatment of Hæmorrhage, Rupture of the Urethra, Wounds and their Treatment—the part dealing with the prevention of wound infection being especially clear and comprehensive, only one antiseptic—viz., the biniodide of mercury—being omitted from the list of antiseptics, one which, in our experience, is far preferable to the perchloride of mercury, its only drawback being its expense in solution as compared with the solution of the perchloride. In the chapter on gun-shot wounds the author's experience almost coincides with that of our surgeons on the battle-fields of South Africa.

Chapter 9, comprising over 100 pages, is devoted to the consideration of fractures in general, their complications and treatment.

Chapter 10 deals with fractures of the neck of the femur, Colles' fracture, and fractures of the skull. Needless to say, the subject of bony union in fractures of the neck of the femur is fully discussed, and the author quotes largely from his own experiments in this connection; while the treatment of fractures in this vicinity is fully and clearly set forth. The treatment recommended by Professor Senn for Colles' fracture—viz., "In adults immobilisation of the fragments by appropriate dressings should be continued for a period of at least four weeks," after which active and passive motion and massage are begun. The

general tendency at present is to completely reduce the fracture and immobilise it for a few days, after which gentle passive movements and massage are employed twice a day for a few minutes at a time, the splints being merely removed for this purpose and then reapplied. This is the mode of treatment for a fortnight or so, after which the splints are discarded, and gentle active and passive movements encouraged until by the time bony consolidation is complete the functions of the joint and hand are all completely restored. Figure 452, illustrative of the manner of dividing the rings in the performance of tracheotomy, is not one which we would recommend occasional operators to follow closely. The plate represents the surgeon dividing the rings from above downwards. This may be quite safe in the hands of an experienced operator in the right operation, but the method of division from below upwards, especially in the low operation, will ensure greater safety, no matter who the operator may be. The part of the book from page 662 to page 1,023, inclusive, is devoted to abdominal surgery. Anyone acquainted with the author's work on Intestinal Obstruction and Intestinal Surgery generally will know what to expect in these pages, and we can promise he will not be disappointed. In them is embodied the practical experience of a distinguished operating surgeon and original worker on one of the most abstruse of all surgical subjects.

In the first edition of such a large book we could scarcely expect it to be free from errors. On page 103 the word "specimen" should read "specimens." On page 656, and again on page 658, the word "subperitoneal" should read "subperiosteal." On page 1,067 the word "poliferation" should read "proliferation." Figure 516, p. 827, illustrative of the application of Murphy's button, shows the purse string suture as starting and terminating at the mesenteric attachment, instead of opposite to it, or to one or other side of it. Figure 617, page 1,081, described as von Walther's lateral radical flap method of disarticulating at the wrist joint, is one which we have been accustomed to look upon as that of Dubreuil.

"*Semper Paratus*" is the motto of the book, and anyone

with any surgical instinct who reads and studies it cannot fail to be *semper paratus*, so far as the subjects with which it deals are concerned.

The illustrations are numerous, while many are original, but all lend additional value to the text.

In conclusion, we desire to say that it has given us genuine pleasure to read over this volume, and we heartily congratulate the author, and strongly recommend the work as the best of its sort we have ever read.

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*Matière Médicale Zoologique. Histoire des Drogues d'Origine Animale.* Par H. BEAUREGARD, Professeur à l'École Supérieure de Pharmacie de Paris, Ancien Assistant de la Chaire d'Anatomie comparée au Muséum d'Histoire Naturelle, Membre de la Société de Biologie. Révisé par M. CONTIÈRE, Professeur agrégé chargé de Cours à l'École de Pharmacie. Avec Préface de M. D'ARSONVAL, Professeur au Collège de France, Membre de l'Institut. Paris: Ancienne Librairie, G. Cuvré et C. Naud. C. Naud, Editeur, Rue Racine, 3. 1901.

THIS clearly-printed and well-illustrated octavo of 396 pages is sent forth, after the manner of the French publisher, in paper wrappers, and with a poor index. But, as is usual in French scientific literature, the matter has been judiciously selected, its arrangement is admirable, and the style of the author is transparent—even to brilliancy. Within recent years the subject of animal therapeutics has been accorded a prominent place in current medical literature—owing in large measure, we believe, to the initiative movement of the late Professor Brown-Séquard. But most of the authorities who have undertaken to enlighten the professional world on this interesting subject have ignored the fact that “animal therapeutics” have always—till within a century or so—occupied a very prominent place in the medical armamentarium. There is hardly a member of the animal kingdom, from the whale and the elephant, down to the flea, whose economy has not been laid under contribution for the alleviation of the physical ills of the human frame.

The interesting volume now before us deals with but a limited portion of this vast domain. But the name of Professor Beauregard has been already well known in connection with his original researches in special departments of this wide field. Accordingly, his contributions on the subject merit special attention, for he brings to the investigation of his subject the knowledge of modern science and the methods of modern research, which his predecessors assuredly did not possess. As he well and truly observes, recent writers on the same subject have mostly been zoologists; and their treatises, accordingly, have mostly been on "*Zoologie Médicale*," and not on "*Matière Médicale*," Accordingly, he has undertaken to investigate the subject from the anatomical standpoint, for which the former writers on the same subject did not possess the requisite knowledge; and he had already been known to the scientific world by his valuable investigations on special items of the therapeutic agents derived from the animal kingdom. For these reasons he possesses unprecedented facilities for the discussion of the actual value of the agents which he has undertaken to discuss. So that his statements and opinions on such subjects as Castor, Cantharides, Musk, Cod-liver Oil, and Spermaceti, deserve all the attention and respect which the earnest student of *Materia Medica* can bestow upon them. His work by no means exhausts the vast field of animal therapeutics; but, in the special departments which he has undertaken to discuss, he displays an intimate knowledge of his subject, and a thoroughly original way of investigating and displaying the merits of his complicated materials. Accordingly, we feel it our duty to recommend the present volume most warmly to the earnest perusal of every medical practitioner.



## PART III

### MEDICAL MISCELLANY.

*Reports. Transactions, and Scientific Intelligence.*

*Radial Paralysis from Fracture of the Humerus ; Liberation of the Nerve ; Reaction of Degeneration ; Treated by Electricity ; Complete Cure.* By MM. JABOULAY and CHANOS, of Lyons ; and MM. CROS and CARAYON, of Marseilles. Translated from the *Lyon Médical* by GEORGE FOY, M.D. ; Surgeon to the Drumcondra Hospital, Dublin.

M. X., an independent gentleman of thirty-five years of age, without medical antecedents. On the 4th of November, 1900, he fell from a cab on to his left side. Blood was extravasated freely under the skin, from the shoulder down the chest. He also had fracture of the lower third of the humerus. The following day the fracture was reduced, and the arm placed in an immovable apparatus. Radiographs showed that the fracture was properly set, and that the fragments were perfectly co-apted. In twenty-seven days the fracture was consolidated. The patient is perfectly sure on this point. After the accident the wrist remained flexed, and it was impossible to extend either it or the fingers. After the osseous union was complete the radial paralysis continued, and the patient consulted M. Jaboulay, who considered that the paralysis was due to nerve fibres being included in the callus. He recommended an exploratory operation.

On the 26th of December an incision was made over the point of fracture, and the nerve was found included in the uniting callus. When the nerve was freed it was found to be slightly red. M. Jaboulay, on the first of January, sent the patient to Dr. Chanos to examine him electrically. By Dr. Chanos he was found to have muscular atrophy of the muscles of the forearm, which reacted well to faradisation. The hand is flexed on the forearm in the position of pronation. The extension of the forearm is possible, but it is more readily performed on the healthy side. Voluntary ex-

tension of the wrist and of the fingers is impossible. Supination of the forearm when extended cannot be performed. Supination may, however, be made voluntarily when the forearm is flexed. All the other movements of the limb are possible, though they are not carried out as easily as normal. The patient cannot dress himself or grasp the least object with the left hand because of the flexion and apposition of the thumb.

In the region of the radial nerve the sensibility above the elbow is slightly diminished; below this point it is very much lessened, and this loss of sensation is good for tactile sensation, heat, and both the faradic and galvanic currents. A sensation of heat between the thumb and the index finger, between the index and middle finger, and a sensation of formication at the points of his fingers are complained of. Pressure on the course of the flexor muscles gives pain.

*Electric Conditions.*—An electrode of 100 cent. is placed on the sternum. The tampon of 2 or 3 per cent. is charged from the Bergonié apparatus. The galvanic current is supplied from a small battery of forty small cells mounted in series. The intensity can be modified as may be thought necessary, by means of a rheostat of graphite of a resistance of 250·000 + 4·200 ohms. The faradic current is generated by a large coil. The interruptions are made by the apparatus of Neef. An accumulator is attached to the coils. The primary source has a strength of four volts. The resistance of the primary coil is 0·546 ohms; those of the secondary equalled 1·155 ohms. The intensity is varied by the relative displacement of the coils; in the limits of displacement employed the mutual induction of the coils varied from 12 to 52, multiplied by 10, less 4 Henrys (measured by an intensity of 0·95 ampères in the primary).

*Examination of the Radial Nerve.*—(a) We cannot affirm that the active electrode was placed on the point of election. Contractions followed both faradisation and galvanisation of the radial\* nerve in the musculo-spinal groove. (b) On placing the electrode on the brachial plexus—point of Erb—the triceps contracted under the influence of a current stronger than that which affected the corresponding muscle of the opposite side; but even with much stronger currents it was not possible to get reaction in the other muscles supplied by the nerve.

*Examination of the Muscles.*—The faradic current failed to

\* Radial nerve in the paper conforms to the musculo-spinal nerve of British authors.

produce contraction of the muscles supplied by the nerve, though very strong currents were tried.

*Degeneration, Reaction of.*—We had no difficulty in obtaining the reaction of Philarducci—the negative pole from 4 to 5 centimetres above the wrist, on the tendons of the extensors. By a current of 4 milliamperes well-marked contractions were produced of the muscles supplied by the radial. We diagnosed radial paralysis and inflammation of the radial nerve in its inferior portion. Our prognosis was grave, almost hopeless. We stated that a cure might possibly be brought about after four or five months' treatment vigorously carried out.

*Treatment.*—We recommended the following:—1. Discontinuance of the faradic current for the first month. 2. Daily treatment by galvanic negative currents. An electrode of 3 centimetres to be placed on the radial nerve and over the affected muscles—the intensity of the current to be of 5 milliamperes at the beginning, and to be increased up to 10 milliamperes. 3. Massage lightly practised.

The treatment commenced on the 2nd of January, and on the 9th of the month the family had business that required their going to Marseilles, where MM. Cros and Carayon consented to carry out the treatment suggested.

On the 25th of January MM. Cros and Carayon reported—“Atrophy of the muscles continues. Slight voluntary movement. Skin pale and glistening on the dorsum of the hand. Œdema from the wrist to the tips of the fingers, and too tense to pit; more marked on the ring and little fingers than on the others. During the night the œdema became worse and painful on pressure. The excitability (galvanic) of the long supinator and extensor of the thumb is slightly increased. With these the cubital posterior, first and second radial and the extensor communis approach the normal.”

The treatment was carried out daily, the intensity of the current being raised to 8 milliamperes.

On the 9th of March the patient was in Lyons, and Dr. Chanoz, by examination, confirmed the reports of MM. Cros and Carayon.—

(a) The radial nerve reacts slightly to the galvanic current.  
(b) The reaction of the galvanic current in the muscle tissue has diminished almost to normal. The faradic current produces some reaction in the muscles of the back of the forearm. The forearm can be extended from the arm, and the hand supinated;

voluntary movements of supination are now possible. Unfortunately muscular atrophy is present ; withal there is a marked improvement, and a cure now appears certain and not far off. The treatment is now ordered to be continued for twenty minutes daily, and the current increased to 10 milliampères.

From this time, the middle of the month of March, the patient made rapid progress—the œdema disappeared, the muscular atrophy gradually was recovered from, the hanging wrist little by little regained strength, and the hand could after a time be held out in a straight line with the forearm. The muscles came to react to the faradic current, the power of voluntary extension was recovered, and the patient came to be able to dress himself. He could button his shirt and grasp bodies with the left hand.

After four months of treatment the voluntary movements of the muscles were restored. Extension and abduction of the thumb and extension of the index finger were still difficult ; but extension of the hand in a line with the forearm and supination were performed with great facility. All feeling of formication, blisters, and pains disappeared. A slight swelling of the wrist on the dorsal surface of the hand alone told of anything of its former state. The electric reactions of the nerves and muscles are a little above the normal. The injured limb has recovered almost all its energy. The patient now discontinued all treatment, and went on a visit to the country.

Last May the patient called on Dr. Jaboulay, of the Hotel Dieu, Lyons, to show himself, the only mark of his recent paralysis being a slight impairment of the power of abduction of his thumb.

The case is an interesting study of the therapeutic value of electricity in the degenerations of traumata.

The march of the reactions from the day of the accident, the 4th of November, to the 26th of December, when the nerve was liberated from the callus.

Considered clinically, the case offered little prospect of recovery after the operation. But the careful electric examination showed that the case had some of the elements of hope ; and the passing away of the muscular and nerve paralysis fully justified the hopeful view taken after the electric examination.

Before commencing treatment, in such cases it is absolutely necessary to study carefully the electric reactions of the nerves and the muscles. This indispensable examination must be made before the treatment is decided on.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

### SECTION OF MEDICINE.

President—SIR CHRISTOPHER J. NIXON, M.D., F.R.C.P.I.

Sectional Secretary—R. TRAVERS SMITH, M.D.

*Friday, December 13, 1901.*

WALTER G. SMITH, M.D., in the chair.

#### *Disseminated Sclerosis.*

DR. FINNY exhibited a girl, aged twenty-two, with all the typical symptoms of this disease. His account of the case was published in the number of the Journal for January, 1902 (Vol. CXIII., p. 1).

#### *Hemichorea and Parotitis complicating a case of Diabetes.*

DR. GEORGE PEACOCKE read a paper on this subject. It appeared in the number of the Journal for January, 1902 (Vol. CXIII., p. 5).

DR. WALTER SMITH, MR. H. G. CROLY, and DR. PARSONS discussed the paper.

#### *Glycosuria and Insanity. (A Clinical Study).*

DR. DAWSON read a paper, of which the following is an abstract:—Cases of glycosuria associated with insanity were of two classes—those in which the insanity was secondary and those in which the glycosuria was secondary, the first being rare. He had had one case of the first class at Farnham House, that of a woman who had suffered for many years from polyuria and recurrent melancholia, with general delicacy, the melancholia being of the type described as characteristic of diabetic insanity. She had been admitted for a severe attack, and, sugar being present in the urine, was put on diabetic diet, The sugar and the mental symptoms disappeared, and she was discharged recovered in about two months. The diet has since been persisted in, and

she has remained unusually well for about a year. Two other cases were then briefly described which probably belonged to the second class. In one, depression dated from an attack of influenza; in the other, the melancholia was a second attack, the first following an injury to the head. Both had glycosuria for which they were treated, and recovered, so far as the acute attack was concerned. In four more cases glycosuria had been present on a few occasions only, and had not been treated, the forms of mental disease being respectively paranoia with depressing delusions, sub-acute mania with a tendency to stupor, acute mania with stupor and unpleasant delusions, and acute confusion. In all but one of the seven cases a prominent characteristic was mental discomfort, and, when it could be tried, there was high blood-pressure during the acute stage. Five had made good recoveries, and one was in a fair way to do so—the paranoia being, of course, incurable. In true diabetic insanity the mental symptoms were due to cerebral malnutrition. The glycosuria when merely symptomatic was probably purely alimentary, and dependent on a failure of sugar assimilation which had been observed to be especially frequent in melancholia. Glycosuria did not appear to be necessarily of bad prognostic import in insanity.

DR. WALTER G. SMITH would like to ask DR. DAWSON whether glycosuria was more common among the insane than among the sane. Savage had found it in not more than 3 per cent. of the patients at Bethlem Hospital; this differed from the experience of the Vienna physician, who found that 12 per cent. of the insane suffered from glycosuria. He would also like to know from Dr. Dawson if glycosuria gave rise to any special form of insanity. He was under the impression that it was associated more with melancholia than with exaltation. When glycosuria does occur in the insane is it characterised by any special symptom such as slight polyuria?

DR. LEPPER asked what is the relationship between glycosuria and insanity? Of the admissions under his care in Swift's Hospital 3 per cent. suffered from glycosuria. They present none of the classic symptoms of diabetes, except the presence of sugar. The Hindoos suffer greatly: every family has lost some member through diabetes. On the other hand, the phlegmatic Chinese escape: of 15,000 persons examined not one suffered from that disease.

DR. RICHARD A. HAYES also spoke.

DR. DAWSON, in reply, stated that he looked on glycosuria as uncommon in the insane; these were the first cases he had. The more common forms were melancholia and senile dementia. In all his cases he found high blood pressure. The special senses are seldom affected in diabetes mellitus. We do not understand tendon reflexes.

*An Uncommon Case of Sudden Death.*

MR. J. J. BURGESS exhibited a specimen of unilateral fatty degeneration of the heart. He said: The specimen before you was taken from the body of a poorly-nourished man, aged thirty-five, a labourer out of employment. From the evidence at the inquest I learned that he at least did not complain of being unwell until the fatal seizure came on. I presume whilst seeking for employment he was noticed by some people to suddenly fall with his shoulder resting against a wall, and then drop to the ground. The people did what they could to revive him, but when the ambulance arrived he was so evidently dead that they took him to the Morgue instead of to one of the hospitals. The body was, I remarked before, not well nourished, but not emaciated; both lungs were emphysematous with a large amount of muco-pus in the bronchial system. but exhibited nowhere cicatrices or consolidation. The pericardium was distended; on opening it, somewhat over a pint of fluid blood and clots exuded, from both ventricles especially. The surfaces of the right ventricle were covered by recent lymph. which at the time could be easily detected, and presented that fluffy appearance which you can see faintly in the specimen. Before removing the heart I searched assiduously for the source of the hæmorrhage but without result, nor could I find it afterwards. On opening the heart it will be noticed that the valves are in no way affected, the entire anterior wall of the right ventricle is principally composed of fat, there is almost a total absence of muscular fibre; this is very striking on comparing it with the left ventricle, which is fairly normal. Both coronary arteries are permeable. In the right ventricle was a clot formed at time of death. Both auricles present nothing abnormal. The aorta shows considerable evidence of atheroma. Although I have not been able to demonstrate the source of the hæmorrhage, I think the cause of death is obvious. During an attack of acute pericarditis, associated with a previously diseased heart, a bleeding occurred, which was sufficient, although small in amount, to cause

by its presence fatal syncope. I find on consulting the literature on the subject that hæmato-pericardium is produced by two sets of causes, the most common being the rupture of the left ventricle or of an aneurysm or of some vessel into its sac; the second in which during the course of pericarditis of cancerous or tuberculous origin a bloody serum is exuded into the sac, and a similar effusion also in some cases of scurvy and purpura. In my case there was no trace of malignant disease or of tuberculosis, but it is interesting as being one of acute pericarditis with the very uncommon complication of a true hæmorrhage, probably from capillary vessels, which, although comparatively small, was sufficient on account of the diseased condition of the myocardium to cause sudden death.

DR. FINNY doubted the statement that the change in the ventricle was due to fat. He suggested a new growth of some description as more probable. He was of opinion that a histological examination should be made of the heart before the case was published in the "Transactions."

The Section then adjourned.

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#### LYNCHING.

A CAUSE of death is met with in the United States which, fortunately, does not appear in English returns—namely, lynching. According to the *Chicago Tribune* the lynchings which took place last year in the States outnumbered the official executions. During the year 1901 there were 118 legal executions, 71 of those executed being negroes, and 47 whites. But there were 135 lynchings, an increase of 20 over the year before, and of the victims 107 were negroes, one was an Indian, and one a Chinaman, and only 26 were whites. A very important point is the increase of lynchings 14 as compared with 8 in 1900) in the more Northern States, six of these cases having taken place in California, and four in Montana. It would seem that life is held somewhat cheap in many parts of the States. During the year 1901 there were 7,245 suicides, and 7,852 murders, the latter being in striking contrast to the 118 official executions.—*The Hospital*, Jan. 25, 1902.



# SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;

F.R. Met. Soc. ;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.;

## VITAL STATISTICS.

*For four weeks ending Saturday, December 28, 1901.*

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending December 28, 1901, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 22·8 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,079,708. The deaths registered in each of the four weeks ended Saturday, December 28, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Dec. 7	Dec. 14	Dec. 21	Dec. 28			Dec. 7	Dec. 14	Dec. 21	Dec. 28	
22 Town Districts	19·3	18·8	22·3	22·8	20·8	Lisburn	9·1	0·0	13·7	22·8	11·4
Armagh	20·7	20·7	6·9	6·9	13·8	Londonderry	27·5	22·2	23·5	10·5	20·9
Ballymena	9·6	33·3	19·2	19·2	21·6	Lurgan	8·9	4·4	13·3	26·6	13·3
Belfast	19·2	21·0	21·4	22·3	21·0	Newry	4·1	8·3	8·3	12·4	8·3
Clonmel	56·2	10·2	5·1	5·1	19·2	Newtownards	11·4	11·4	23·6	17·2	17·2
Cork	17·8	24·0	25·4	26·1	23·3	Portadown	20·8	10·4	15·6	26·0	18·2
Drogheda	28·6	16·3	16·3	4·1	16·3	Queenstown	19·8	6·6	0·0	13·2	9·9
Dublin (Reg. Area)	20·2	17·9	25·9	26·8	22·7	Sligo	24·0	0·0	24·0	4·8	13·2
Dundalk	16·0	8·0	8·0	16·0	12·0	Tralee	26·6	10·6	37·2	0·0	18·6
Galway	19·4	33·9	7·8	23·3	22·3	Waterford	9·7	11·7	15·6	19·5	14·1
Kilkenny	5·0	34·8	29·8	19·9	22·4	Wexford	23·4	14·0	28·0	14·0	19·8
Limerick	16·4	16·4	20·5	34·2	21·9						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, December 28, were equal to an annual rate of 1·1 per 1,000—the rates varying from 0·0 in fifteen of the districts to 5·7 in Newtownards. Among the 150 deaths from all causes registered in Belfast are 3 from whooping-cough, 3 from enteric fever, and one from diarrhoea. The 38 deaths in Cork include one from whooping-cough, and one from diarrhoea.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1901, is 375,076, being made up of the following:—City, 290,837; Rathmines, 32,589; Pembroke, 25,563; Blackrock, 8,727; and Kingstown, 17,360.

In the Dublin Registration Area the births registered during the week ended Saturday, December 28, amounted to 93—44 boys and 49 girls; and the deaths to 200—102 males and 98 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 27·8 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 26·8 per 1,000. During the fifty-two weeks ending with Saturday, December 28, the death-rate averaged 25·6, and was 0·8 under the mean rate for the corresponding portions of the ten years, 1891–1900, based on the estimated mean population of the Dublin Registration Area as then constituted.

Sixteen deaths from zymotic diseases were registered during the week under discussion, being 4 under the number for the preceding week, and equal to an annual rate of 2·2 per 1,000 of the estimated population, the average rate for the 52nd week of the past 10 years being 3·4 per 1,000. The 16 deaths comprise 5 from enteric fever, 2 from diphtheria, 3 from influenza, 3 from diarrhoea, 2 from erysipelas, and one from septicæmia.

Tubercular disease caused 30 deaths, namely, 21 from pulmonary tuberculosis, 4 from tubercular meningitis, one from tabes mesenterica, and 4 from other forms of tuberculosis.

: Diseases of the respiratory system caused 46 deaths—including

37 from bronchitis and 7 from pneumonia—being 14 over the number recorded in the preceding week, and equal to a rate of 6·4 per 1,000 of the estimated population, the average rate for the 52nd week of the preceding 10 years being 8·1 per 1,000.

The deaths of 8 children under 5 years of age, of whom 7 were under one year, including 2 infants under one month old, were caused by convulsions.

There were seven deaths from apoplexy, and 12 from other diseases of the brain and nervous system (exclusive of convulsions).

Four deaths were caused by cancer, and 26 by diseases of the circulatory system.

Eight accidental deaths were registered, including 2 from burns or scalds.

In 13 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the deaths of 5 infants under one year old and the deaths of 5 persons aged 60 years and upwards.

Thirty-eight of the persons whose deaths were registered during the week ending December 28 were under 5 years of age (27 being infants under one year, of whom 8 were under one month old) and 63 were aged 60 years and upwards, including 30 persons aged 70 and upwards, of whom 7 were octogenarians, and one (a female) was stated to have been aged 91 years.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending	December 7, 1901 ..	..	41 cases.
"	December 14, " ..	..	72 cases.
"	December 21, " ..	..	56 cases.
"	December 28, " ...	..	45 cases.

Of the 45 cases notified in the week ended December 28, 10 were erysipelas, 12 enteric fever, 16 scarlatina, 6 diphtheria, and one continued fever.

##### (2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases

of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending December 7, 1901 .. .. 7 cases.

" " December 14, " .. .. 8 cases.

Fortnight " December 28, " .. .. 11 cases.

Of the 11 cases notified in the last fortnight, 4 were scarlet fever, one diphtheria, one erysipelas, one continued fever, and 4 enteric fever.

### (3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending December 7, 1901 .. .. 13 cases.

" December 14, " .. .. 6 cases.

" December 21, " .. .. 12 cases.

" December 28, " .. .. 28 cases.

Of the 28 cases notified in the last week, 6 were whooping-cough, one scarlatina, 2 enteric fever, 18 measles, and one erysipelas.

### (4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS

Nine cases of enteric fever were admitted to hospital during the week ended Saturday, December 28; 10 patients were discharged, 2 died, and 63 remained under treatment at the close of the week.

Fourteen cases of scarlatina were admitted to hospital, 14 patients were discharged, and 57 remained under treatment at the close of the week. This number is exclusive of 23 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Ten diphtheria patients were admitted, 8 were discharged, one died, and 41 remained under treatment at the close of the week.

Two cases of typhus fever were admitted during the week, and remained under treatment at its close.

In addition to the above-mentioned zymotic diseases recognised as such, 5 cases of pneumonia were admitted to hospital, 9 cases were discharged, and 19 cases remained under treatment at the close of the week.

## STATE OF INFECTIOUS DISEASE IN BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending December 7, 1901 .. ..	62 cases.
„ December 14, „ .. ..	62 cases.
„ December 21, „ .. ..	52 cases.
„ December 28, „ .. ..	43 cases.

Of the 43 cases notified in the week ended December 28, 21 were enteric fever, 4 erysipelas, 5 diphtheria, 8 continued fever, 3 scarlet fever, and one membranous croup.

## ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 28, in thirty-three large English towns, including London (in which the rate was 20·6), was equal to an average annual death-rate of 21·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·6 per 1,000, the rate for Glasgow being 24·8, and for Edinburgh 21·9. Smallpox caused 24 of the deaths registered in London.

## METEOROLOGY.

*A tract of Observations made in the City of Dublin, Lat. 53° 20' N. Long. 6° 15' W., for the Month of December, 1901.*

Mean Height of Barometer, - - -	29·609 inches.
Maximal Height of Barometer (3rd, at 9 p.m.), -	30·361 „
Minimal Height of Barometer (24th, at 9 p.m.) -	28·747 „
Mean Dry-bulb Temperature, - - -	39·9°.
Mean Wet-bulb Temperature, - - -	38·2°.
Mean Dew-point Temperature, - - -	36·0°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·215 inch.
Mean Humidity, - - -	86·5 per cent.
Highest Temperature in Shade (on 8th) -	55·9°.
Lowest Temperature in Shade (on 21st) -	24·0°.
Lowest Temperature on Grass (Radiation) (21st)	19·6°.
Mean Amount of Cloud, - - -	59·4 per cent.
Rainfall (on 23 days), - - -	1·989 inches.
Greatest Daily Rainfall (on 7th) -	·619 inch.
General Directions of Wind, - - -	W., S.W.

*Remarks.*

As usual, December proved a changeable, damp, and dull month. The westerly (between S.W. and N.W.) winds were often strong and blustering, and the rainfall—though not large in Dublin—was frequent. The month opened and closed with mild weather, but a cold period set in on Sunday, the 8th, lasting until Sunday, the 29th. The cold was most intense in the English Midlands, where snow and sleet fell in large quantities. On Sunday, the 22nd, the low minimum of 4° Fahrenheit was registered at Newton Reigny, Penrith, Cumberland. In Dublin City the estimated duration of bright sunshine was 63½ hours, or a daily average of 2 hours.

In Dublin the arithmetical mean temperature (40·5°) was below the average (41·3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 39·9°. In the thirty-six years ending with 1900, December was coldest in 1878 (M. T. = 32·8°), and in 1874 (M. T. = 36·8°); warmest in 1898 (M. T. = 47·6°), and in 1900 (M. T. = 47·1°). December, 1898, established a record for high mean temperature, the value being half a degree above that for the exceptionally mild December of 1900, which was 6·6° warmer than the month just passed.

The mean height of the barometer was 29·609 inches, or 0·266 inch below the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·361 inches at 9 p.m. of the 3rd, and fell to 28·747 inches at 9 p.m. of the 24th. The observed range of atmospheric pressure was, therefore, 1·614 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 39·9°, or 4·1° below the value for November. Using the formula, *Mean Temp.* = *Min.* + (*Max.*—*Min.* × ·52), the value was 40·6°, or 0·9° below the average mean temperature for December, calculated in the same way in the twenty-five years, 1865–89, inclusive (41·5°). The arithmetical mean of the maximal and minimal readings was 40·5°, compared with a twenty-five years' average of 41·3°. On the 8th the thermometer in the screen rose to 55·9°—wind, W., on the 21st the temperature fell to 24·0°—wind, calm. The minimum on the grass was 19·6°, also on the 21st. There was frost in the screen on 9 days, and 22 days of frost on the grass were recorded.

The rainfall was 1·989 inches, distributed over as many as 23 days. The average rainfall for December in the twenty-five years,

1865–89, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, was below, while the rainy days were much above, the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 inch was measured on 13 days; in 1885, only ·742 inch on 10 days; in 1892, only ·795 inch on 10 days; and in 1871, only ·797 inch on 15 days. In 1900, 1·602 inches of rain fell on 20 days.

Solar halos were seen on the 2nd, 10th, and 31st. High winds were noted on as many as 16 days, and attained the force of a gale on six occasions—the 7th, 8th, 12th, 13th, 23rd, and 30th. The atmosphere was more or less foggy in Dublin on the 3rd, 11th, 16th, 20th, 21st, 22nd, and 27th. Lightning was seen on the evening of the 8th. Snow or sleet fell on the 9th, 12th, 15th, 19th, and 23rd. Hail fell on the 8th, 9th, 12th, 14th, 19th, and 27th.

The rainfall in Dublin during 1901 amounted to 26·075 inches on 179 days, compared with 34·338 inches on 216 days in 1900, 27·737 inches on 186 days in 1899, 27·048 inches on 194 days in 1898, 29·344 inches on 211 days in 1897, 26·901 inches on 194 days in 1896, 31·242 inches on 194 days in 1895, 29·261 inches on 209 days in 1894, only 20·493 inches on 174 days in 1893, 25·644 inches on 196 days in 1892, 27·820 inches on 184 days in 1891, only 16·601 inches on 160 days in 1887, and a twenty-five years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·325 inches, distributed over 19 days. Of this quantity ·770 inch fell on the 27th, and ·500 inch on the 13th. From January 1st to December 31st, 1901, rain fell at Knockdolian on 166 days, to the total amount of 34·750 inches. The corresponding figures for 1894 were 38·776 inches on 184 days; for 1895, 35·135 inches on 174 days; for 1896, 36·102 inches on 169 days; for 1897, 42·885 inches on 210 days; for 1898, 30·546 inches on 171 days; for 1899, 36·690 inches on 182 days; and for 1900, 42·716 inches on 191 days.

Dr. B. H. Steede reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell on 26 days to the amount of 3·782 inches, ·765 inch being measured on the 27th, and ·720 inch on the 12th. At this Station of the Second Order the highest temperature in the shade was 55·2° on the 8th, the lowest was 28° on the 21st. The rainfall for the year 1901 was,

31·931 inches on 181 days, compared with 40·193 inches on 194 days in 1897; 33·140 inches on 174 days in 1898, 34·699 inches on 174 days in 1899, and 37·256 inches on 188 days in 1900.

At the Railway Hotel, Recess, Connemara, Co. Galway, December was unsettled and stormy. The rainfall was 7·667 inches on 20 days, compared with 9·413 inches on 26 days in December, 1899, and 7·810 inches on 27 days in 1900. On the 8th ·850 inch fell.

The rainfall at Cloneevin, Killiney, was 2·55 inches on 23 days. The maximal fall in 24 hours was ·47 inch on the 7th. The average December rainfall of the 16 years (1885–1900) was 2·437 inches on 17·4 days. Snow, sleet, or hail fell on 7 days—the 8th, 9th, 11th, 15th, 19th, 20th, and 21st.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 20 days to the amount of 3·16 inches, ·64 inch being measured on the 11th, and ·63 inch on the 7th. Temperature ranged from 55° on the 7th to 25° on the 21st and 26° on the 22nd. The mean shade temperature was 40·3° Fahrenheit.

In the City of Cork, rain fell on 19 days to the amount of 5·78 inches, or 1·24 inches more than the average. The greatest day's rainfall was 1·18 inches on the 11th, snow falling heavily on the night of that day.

At the Ordnance Survey Office, Phoenix Park, the rainfall was 2·115 inches on 22 days, ·680 inch being registered on the 7th.

Dr. J. J. MacGrath reports that at the Spa House, Lisdoonvarna, Co. Clare, the rainfall was 4·28 inches on 23 days, the maximal fall in 24 hours being ·64 inch on the 7th.

Dr. J. Byrne Power, D.P.H., Medical Superintendent Officer of Health for Kingstown, Co. Dublin, reports that at Kingstown the mean temperature for December was 41·6°, extremes being—highest, 57° on the 7th; lowest, 29° on the 23rd; and the mean daily range, 8·8°. The mean sea temperature at Sandycove Bathing Place was 44·0°. The duration of bright sunshine was 47·9 hours. At Bournemouth the thermometer was below 32° on 12 consecutive days, and on the 23rd it was as low as 21°, while at Kingstown on the same day it fell only to 29°, and was not below 32° on any other day during the month. The mean temperature at Bournemouth was 42·3°, that at Kingstown was 41·6°. The Kingstown rainfall for December was 2·35 inches on 22 days, that of Bournemouth being 2·82 inches on 19 days. The total annual rainfall at Kingstown in 1901 was 26·6 inches on 178 days, the annual mean temperature being 49·8° or 0·8° below the average.



## RAINFALL IN 1901.

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 50 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more fell
	Inches	Depth	Date	
January,	2·672	·940	9th	17
February,	1·200	·420	28th	12
March,	1·784	·329	5th	17
April,	·864	·160	15th	12
May,	1·204	·250	27th	9
June,	1·628	·712	22nd	18
July,	2·080	·747	1st	18
August,	2·952	·892	10th	18
September,	3·686	·825	16th	18
October,	2·896	·572	29th	21
November,	3·620	·2037	11th	11
December,	1·989	·619	7th	28
Total,	26·075	—	—	179

The rainfall was 26·075 inches, or 1·621 inches in defect of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, in 1884, when the measurement was 20·467 inches, and in 1893, with its rainfall of 20·493 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34·338 inches, or 6·642 inches in excess of the average of the twenty-five years, 1865–1889. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1900—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1901, there were 179 rainy days, or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was much below the average number of rainy

• Maximum

days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rainy days were only 160, and in 1870 they were only 145.

In 1901, the rainfall in 24 hours, from 9 a.m. to 9 a.m., only once exceeded one inch, but on that occasion, November 11, the measurement was 2·037 inches. In 1892 the daily rainfall twice exceeded 1 inch—viz., May 28th (2·056 inches) and August 16th (1·310) inches). On no occasion in 1893 did one inch of rain fall on a given day in Dublin. In 1894 falls of upwards of an inch of rain in 24 hours were recorded on 4 occasions—viz, May 15th (1·330 inches); July 24th (1·560 inches); August 25th (1·369 inches); and October 23rd (1·042 inches). In 1895, 1·802 inches fell on January 12th; 1·014 inches on July 24th; and 1·256 inches on July 25th. In 1896, 1·563 inches fell on July 8th; 2·020 inches on July 24th; and 1·388 inches on December 8th. In 1897, 1·166 inches fell on September 1st. In 1898, on November 23rd, 1·732 inches were measured. In 1899, the rainfall exceeded one inch on 4 occasions—namely, July 11th (1·402 inches); August 5th (2·227 inches); September 30th (1·042 inches), and December 28th (1·129 inches). In 1900, as in 1899, the rainfall exceeded one inch on 4 occasions—namely, July 27th (1·783 inches); August 2nd (2·135 inches); November 6th (1·103 inches); and November 27th (1·126 inches). The excessive rainfall on November 11th, 1901, is noteworthy—it amounted to 2·037 inches in Dublin (Fitzwilliam-square). It was the seventh occasion only since 1865—that is, in 36 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours' precipitation. The previous excessive falls were—August 13th, 1874 (2·482 inches); October 27th, 1880 (2·736 inches); May 28th, 1892 (2·056 inches); July 24th, 1896 (2·020 inches); August 5th, 1899 (2·227 inches); and August 2nd, 1900 (2·135 inches).

Included in the 179 rainy days in 1901 are 30 on which snow or sleet fell, and 29 on which there was hail. In January hail was observed on 5 days, in February on 2 days, in March on 8 days, in April on 3 days, in May on 2 days, in November on 3 days, and in December on 6 days. Snow or sleet fell on 6 days in January, 5 days in February, 8 days in March, 3 days in April and November, and 5 days in December. Thunderstorms occurred once in May, and 3 times in July. Thunder alone also occurred once in April and May. Lightning was seen once in April, 3 times

in July, once in October, twice in November, and once in December.

The rainfall in the first six months was 9·352 inches on 80 days. The rainfall exceeded 3 inches in September (3·686), and November (3·620). In April it was only ·864 inch on 12 days.

The rainfall was distributed as follows:—5·656 inches fell on 46 days in the first quarter, 3·696 inches on 34 days in the second, 8·718 inches on 44 days in the third, 8·005 inches on 55 days in the fourth and last quarter.

More or less fog prevailed on 44 occasions—5 in January, 4 in February, 3 in March, 3 in April, 1 in May, 1 in June, 2 in July, 2 in August, 1 in September, 8 in October, 7 in November, and 7 in December. High winds were noted on 129 days—16 in January, 5 in February, 14 in March, 12 in April, 6 in May, 12 in June, 3 in July, 12 in August, 14 in September, 11 in October, 8 in November, and 16 in December. The high winds amounted to gales (force 7 or upwards according to the Beaufort scale) on 37 occasions—4 in January, 2 in February, 5 in March, 4 in April, 1 in May, 2 in June, 2 in August, 5 in September, 2 in October, 4 in November, and 6 in December.

Solar halos were seen on 19 occasions, lunar halos on 7.

Mr. Robert O'Brien Furlong, M.A., C.B., writes:—

The rainfall at Cloneevin, Killiney, for the year 1901 was 28·65 inches on 184 days. September was the wettest month, with 4·11 inches on 21 days; it had been the driest month in 1900, with only ·70 inch on 8 days.

The greatest number of days on which rain fell in any month was 23 in December.

The driest month was May, with 1·20 inches on 10 days.

The heaviest fall in 24 hours was 1·85 inches on November 11.

The average yearly fall during 16 years (1885–1900) was 27·814 inches on 182·3 days.

The rainfall of 1901 was ·84, and the number of days on which rain fell, 1·7 in excess of the average.

Snow, sleet, and hail were noticed on 16 days.

An absolute drought occurred between May 11th and 25th, inclusive.

Between November 14th and December 4th—21 days—only ·16 inch was measured.

*Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1901.*

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevailing Winds	
January	53.8	22nd	29.1	29th	46.0	37.3	2.672	17	29.953	30.597	23rd	"	29.357	S.E., W.S.W., W.N.W.	
February	51.3	25th	28.0	15th	49.7	34.7	1.200	12	30.113	30.681	15th	29.116	28th	N.W., W.	
March	54.6	12th	26.0	26th	47.0	36.7	1.784	17	29.793	30.558	23rd	28.698	2nd	W.N.W., N.E.	
April	65.2	21st	34.7	17th	55.9	41.3	.864	12	29.783	30.201	17th	29.144	7th	W., E.	
May	66.7	31st	39.1	12th	61.5	45.7	1.204	9	30.100	30.482	23rd	29.203	7th	N.E., E.	
June	71.6	29th	42.6	18th	63.6	50.1	1.628	13	30.036	30.485	25th	29.477	22nd	N.W., E.N.E.	
July	81.8	17th	49.9	7th	70.1	56.8	2.080	13	30.032	30.296	7th	29.589	24th	N.W., N.E.	
August	76.9	8th	44.2	28th	67.5	53.4	2.952	13	30.013	30.475	20th	29.554	25th	N.W., W.	
September	70.7	8th	43.3	1st	63.1	52.2	3.886	18	29.819	30.189	30th	28.946	20th	S., S.E., S.W.	
October	61.9	10th and 28th	35.7	22nd	55.4	44.1	2.396	21	29.880	30.394	31st	29.090	18th	S.W., W.N.W.	
November	56.7	10th	28.3	17th	49.0	40.8	3.620	11	30.163	30.648	25th	28.673	12th	W., S.W.	
December	55.9	8th	24.0	21st	44.9	36.0	1.989	23	29.609	30.361	3rd	28.747	24th	W., S.W.	
Extremes, Totals, and Means	81.8	July 17th	24.0	Dec. 21st	55.6	44.1	26.075	179	29.941	30.681	Feb. 15th	"	28.673	Nov. 12th	W., S.W., N.W.
49.90															

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dublin; F.R.C.P.I.;  
F. R. Met. Soc.

January 1, 1902.

## NEW PREPARATIONS.

### *A New Morphin and Belladonna Suppository.*

MESSRS. BURROUGHS, WELLCOME & COMPANY'S "Enule" Morphin and Belladonna represents a recent addition to the list of "Enule" Rectal Suppositories, and its formula is as follows:—Morphin hydrochloride, gr.  $\frac{1}{4}$ ; extract of belladonna, gr.  $\frac{1}{2}$ . "Enule" Rectal Suppositories possess conspicuous advantages over the old-fashioned varieties. Their improved shape makes them easy of introduction, and prevents their expulsion. Each is enclosed in a hermetically-sealed sheath of pure tin foil, which prevents the possibility of contamination and preserves from deterioration. The active principles are evenly diffused, and the dosage is of high accuracy. "Enule" Morphin and Belladonna Suppositories are sedative and anodyne. They are of great use in relieving pain in irritable conditions of the rectum generally, in cancer of the lower bowel, in prostatitis, cystitis, and also in conditions of the deep urethra associated with pain.

### *Alum Ophthalmic Tabloids.*

"TABLOID" Ophthalmic (T) Alum, gr.  $\frac{1}{250}$  (0.00026 gm.), represents a recent addition to the list of "Tabloid" Ophthalmic Products, prepared by Messrs. Burroughs, Wellcome & Co., London, E.C. The process of manufacture ensures for it, as for all other "Tabloid" ophthalmic products, rapid and complete solubility in the lacrymal secretion. One of the products, placed in the conjunctival sac of the lower eyelid, is almost instantaneously dissolved, and the solution is quickly diffused over the surface of the eye. If preferred, the "Tabloid" product may be dissolved at the time of using in a definite quantity of sterile water, and the solution may be then applied in the usual way. It may be used in any case where the local application of alum is indicated.

### *Aspirin Tabloids.*

MESSRS. BURROUGHS, WELLCOME & COMPANY have brought under our notice a specimen of "Tabloid" Aspirin, gr. 5. Aspirin—a white microcrystalline powder soluble in about 100 parts of water—is chemically an acetyl salicylic acid. It is held to possess advantages over salicylic acid and the salicylates, especially in the treatment of conditions associated with rheumatism and gout. Thus, it does not irritate the mucous membrane of the stomach, and, according to Mr. Wm. Martindale and Dr. W. Wynn Westcott in their *Extra Pharmacopœia*, it is to be preferred in heart and ear complaints. From gr. 5 to gr. 15 is recommended for a dose, to be repeated at intervals at the discretion of the physician.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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MARCH 1, 1902.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. VI.—*On the Rôle of Protozoa in the Causation of Disease.*<sup>a</sup> By EDMOND J. McWEENEY, M.A., M.D. (R.U.I.); M.R.C.P.I.; D.P.H. (R.C.P. & S.I. Conj.); Professor of Pathology and Bacteriology in the Medical School of the Catholic University, Dublin; Bacteriologist to the Local Government Board for Ireland; President of the Pathological Section of the Royal Academy of Medicine in Ireland, &c.

(Continued from page 96.)

WE are now in a position to compare the two-fold developmental cycle of the malarial organism with that of the Coccidia, and thus bring the former into line with what is known of other *Sporozoa*. To begin with the rod-like Sporozoïte in the proboscis of the mosquito, it is, of course, homologous with any one of the 8 "sickle-germs" developed in the mature Coccidium (*oocyst*) evacuated from the intestine of the rabbit. When introduced into a fresh host—the malarial parasite, through the agency of the mosquito, the *Coccidium* passively, with the food—there ensue a number of asexual generations usually termed reproduction by sporulation. This is what Koch styles

<sup>a</sup> Being an Address delivered at the Opening Meeting of the Pathological Section of the Royal Academy of Medicine in Ireland, November 1st, 1901.

the "endogenous," and Schaudinn, more appropriately, the "schizogenous" stage of development. The mature parasite divides into segments called Merozoïtes, assuming, in the case of *Coccidium*, a shape like that of an orange, falling asunder into its constituent carpels, whilst the sporulating malarial parasite becomes rosette-shaped. The continuous repetition of this process brings about a very thorough infection of the host animal, the biliary and intestinal epithelium being the seat of the disease in the one case, and the red blood-discs in the other. Toxæmia and death may be the result of this intense infection. Should this not occur, a reaction takes place in favour of the host-animal. The parasites, incommoded, perhaps, by the accumulation of their own metabolic products, or by antitoxin, or finding their *pabulum* exhausted, or perhaps assailed by some drug (quinine), make their preparations for escape to "fresh fields and pastures new." The asexual reproduction gradually ceases and sexual differentiation occurs. In the case of the *Coccidium*, fertilisation takes place within the body of the animal which has served as host to the asexual generations. In the case of malaria, although the preliminary changes—viz., the formation of crescents, can take place within the vertebrate host, the full evolution of the sexual elements does not occur until they have passed out into the stomach of the blood-sucking invertebrate host. The ripe *Oocyst* of the *Coccidium* reaches the outer world in the fæces of the host animal, and thus undergoes segmentation into four thick-walled spores, each of which divides again into two sporozoïtes, which are liberated only when the spore is swallowed by a fresh animal. In the malarial parasite the *Oocyst* ripens in the interior of the cold-blooded invertebrate host, and breaks up into a seemingly indefinite number of *Sporoblasts*, which do not become encapsulated but divide directly into numerous needle-shaped spores. Through these resemblances and these differences we see the same fundamental ground-plan, and can now readily appreciate why it is that these two groups of organisms—the *Coccidia* and the malarial parasites—mutually explain and illustrate each other.

It would, no doubt, be interesting to many of my hearers were I to give some account of the other orders of the Sporozoa, the Myxosporidia, which attack fishes, the Micro-sporidia, of which the leading species causes a disease of the silk-worm known in France as Pébrine, and the Sarcosporidia, which, in the form of sausage-shaped tubes filled with crooked spores, have long been known to occur in the muscle fibres of the sheep's œsophagus, where they were originally described by Rainey and Miescher in the middle of last century. But this exposition has already overstepped its preconceived limits and those of your patience, I fear, also. I shall, therefore, now proceed to give some account of the remaining species of Protozoa which are known to produce disease.

The leading parasites belonging to the class of Flagellata are the species of *Herpetomonas*, commonly spoken of at present as *Trypanosoma*. They are somewhat fish-like organisms, about 20 or 30  $\mu$  long, provided along one side with a thin vibratile, or so-called "undulating" membrane, which ends in a long flagellum. Their connection with disease in the lower animals was first established by Griffith Evans so far back as 1880. He found them in the blood of horses, mules, and camels in India that were affected with a sort of pernicious anæmia, locally called "Surra," and succeeded in demonstrating, by inoculation experiments, their ætiological relation to the disease. The parasite of Surra has consequently been called *Trypanosoma Evansii*.

In the warmer parts of Africa, along river valleys, and near the sea, there rages a destructive malady chiefly of transport animals (horse, ass, mule, and ox), but also affecting dogs and cats, called in Zululand *Nagana*. The earlier travellers in these regions noticed—that it came on after the affected animal had been bitten by a species of dipterous fly, somewhat larger than the common house-fly, and of a yellowish hue. It is locally known as the *Tse-tse*, and now generally identified with *Glossina morsitans* (Wedgwood). The frightful ravages of this fly, its loud buzz, and venomous attacks on domestic animals, and even on man,



have been painted in lurid colours by Livingstone and other travellers. The cause of the fatal result that so often and so rapidly ensues in susceptible animals as the consequence of the bite of this insect, has long been suspected to be either some toxic material or some form of parasite inoculated by its proboscis. The latter suspicion was proved to be correct by the painstaking and convincing labours of Dr. Bruce, published in 1895, and more completely in 1897 (Harrison, London). He showed that the Nagana is due to a *Trypanosoma* which is taken up by the fly somehow and inoculated by it into the domesticated animals, the blood of which it sucks. Bruce found the parasite in the blood of several kinds of local wild animals (mostly Ungulates, and in one hyena—a Carnivore), so that it is probable that the fly obtains its contained parasite from this source. The wild animals do not seem to suffer much from the parasite. Whilst continuing to harbour it they enjoy in all probability a certain immunity. But the results of the inoculation of the smallest trace of infected blood on domesticated animals of recent introduction into a fly-stricken district are disastrous. Unlike the malarial parasite, the *Trypanosoma* does not undergo any developmental cycle in the fly, which therefore cannot be properly termed an "intermediate host." Indeed, should the fly, once charged with infected blood, fail to get a speedy opportunity of biting a fresh animal, the parasites die out. After a few days the disease caused by the bite only develops after a much lengthened incubation period, whilst 140 hours after the fly becomes infected its contained parasites are all motionless, and appear to be dead. The bite has then no result. For these facts of capital importance we are indebted to the perseverance and acumen of David Bruce. Through the kindness of the late Professor Kanthack, who, together with Drs. Plimmer and Bradford, has experimented with this parasite, as well as to that of Professor G. H. F. Nuttall, of Cambridge, I am enabled to show preparations of guinea-pigs' blood containing the parasites. Whether or no this Tse-tse *Trypanosoma* is identical with that of Surra I cannot say. Koch in his well-known *Reiseberichte* regards

them for the time being as identical, but I have seen no statement as to how the Surra-parasite is conveyed from one animal to another, and this seems to point to a difference. Propagation by fly-bites could hardly fail to have been observed in India if it took place there.

Those who wish to observe the living *Trypanosoma* have only to examine the blood of the common wild rat (sewer rat). In most European countries the rat has been found to harbour this parasite, and I decided to ascertain whether this was the case in Ireland also. Through the kindness of the authorities of the Royal Zoological Gardens, Phoenix Park, I have been enabled to examine the blood of a number of rats caught in the stables and kept alive for the purpose. In seven out of fifteen I found the parasite, often so abundantly, that the blood might be said to swarm with them. I have brought down one of these animals and now exhibit a fresh preparation of the blood, showing several of the fish-like parasites lashing about and causing a commotion amongst the red corpuscles. I have also made stained film preparations by the Romanowsky method, and now demonstrate one showing the anterior and posterior chromatin masses (macro- and micro-nuclei of some authors) as well as the flagellum and edge of the undulating membrane stained red, whilst the rest of the parasite is blue.

The reproduction of *Trypanosoma* takes place asexually by a process of longitudinal splitting, preceded by the (apparently) amitotic division of the nuclei and flagellum. Not infrequently the parasite increases greatly in size, and forms, by radial creasing, a sort of rosette, each segment of which possesses its own flagellum and pair of nuclei, and finally becomes detached. In the preparations I made of the blood of infected rats I found both the double and the multiple division forms to be fairly numerous. The details of the process are of great cytological interest, and have been carefully worked out by Rabinowitsch and Kempner (*Ztschr. f. Hyg.*, Vol. 30), by Wasielewsky and Senn (*ibid.*, Vol. 33) and by Mesnil (*Annales Pasteur*, 1901), to whose papers I must refer those who desire further information. The last-named

writer has succeeded in producing a serum capable of agglutinating the *Trypanosoma*—the first instance, so far as I am aware, of the production of an anti-body specific for a Protozoal parasite.

For the reason stated at the commencement of this paper I pass over the fourth or highest class of Protozoa, the Infusoria, in silence, and, strictly speaking, this exposition should now terminate. But there remain two interesting topics, without reference to which an attempt to give an idea of the subject would remain confessedly incomplete. The first of these is Texas Fever, which is admittedly due to a protozoal parasite, the exact position of which is still uncertain, but which is probably allied to the malarial parasite. The second deals with the *Cytoryctes Vaccinæ*, to which vaccinia and small-pox are, with increasing probability, being ascribed by a growing number of investigators, but the parasitic nature, and indeed the actual existence of which is still called by many in question.

The infectious hæmoglobinuria of cattle, otherwise known as Red-water or Texas Fever, and in Ireland as "blood-murrain," was shown by Theobald Smith and Kilborne in 1892 to be due to a very minute pear-shaped parasite living in the interior of the red blood corpuscles, as well as in certain of the viscera, especially the kidney. Passing over the many interesting facts connected with the morbid anatomy and distribution of the disease that have been since accumulated, and the general tendency of which is to show that red-water may be looked upon as the malaria of Ungulate animals, I come at once to the main fact, long suspected by cattle breeders and ranchmen in the warmest parts of the United States, but first proved by Smith and Kilborne—viz., that the disease is propagated by ticks. These 8-legged, blood-sucking parasites (*Ixodes bovis*), belonging to the group of the Arachnoids, bury their proboscis in the skin of the ox, and continue to suck its blood for many days. During this time fertilisation takes place, the minute male parasite dies, and the fertilised female, swollen to the utmost with blood, drops off, and matures her ova on the ground, unable to

move owing to the huge size of her body. The eggs are laid, and they hatch out in about three or four weeks, producing a brood of very small and very active larval ticks, which run about the grass seeking for an ox. Having found one, they attach themselves, bury their proboscis in its skin, and commence to suck the blood. *Should the young ticks be the offspring of parents that lived on an ox affected with Red-water*, the disease makes its appearance about ten days after the young ticks have commenced to bite. Koch confirmed this remarkable statement of Smith's. We have here the unique phenomenon of a disease being propagated not by the invertebrate host that actually sucked the blood, as in the case of malaria, but by its progeny. How the parasite passes from the mother tick to its offspring has not been definitely determined. Attempts to reproduce the disease by injecting pulped ova and larval ticks have failed. The parasite is so small that it is very difficult to identify microscopically amongst the granules of various sorts that abound in the eggs and embryos of the tick. Conceivably the infection of the young tick may not be of germinal origin, but may be due to a contamination of its outer skin with parasites from the surface of the as yet unhatched eggs amongst which it runs about. Failure to produce the disease on subcutaneous inoculation of presumably infected eggs or embryo-ticks may with some probability be accounted for by supposing that the parasite requires for its successful inoculation the presence in the inoculation wound of some favourable or protective substance, such as the saliva of the tick. That some irritating substance is introduced by the tick-bite seems certain from the fact that an intense inflammatory small-cell infiltration occurs at the bitten place. Under cover of such a substance the early developmental stages of the freshly inoculated parasite are, very probably, passed, and general infection of the ox then ensues. Injected by a hypodermic needle, without the protection afforded by the secretion of the tick, the parasite falls a victim to the natural defensive mechanisms. Such would be, at any rate, one explanation of the facts as we find them.

The parasite is a pear-shaped, sometimes club-like, or even discoid mass of amœboid protoplasm, about the size of that of human tropical malaria. Two are often present in the one red corpuscle, hence the name given to it by its discoverers—*Pirosoma* \* *bigeminum* (Sm. and K.). My friend, Professor Mettam, Principal of the Royal Veterinary College, has made the interesting observation that this parasite exists in Ireland, and through his courtesy I am enabled to show some demonstrative preparations. [Demonstration.]

The question of *Vaccinia* and its ætiology is one of absorbing interest at present. The main facts are these: Bacteria are numerous in the vaccine crusts of the calf, and efforts have been made by, amongst others, Besser, Klein, Copeman, Stanley Kent, Vanselow and Czaplewski (*Centralbl. f. Bakt.*, Vol XXV., 1889), Nakanishi (*ibid.*, Vol. XXVII.), and others to demonstrate a casual relation between one or other of these bacteria and the vaccine process. These efforts have been unsuccessful. Other observers have adopted the view that a protozoal parasite is at work, and one of the earliest and most industrious workers at parasitic Protozoa—L. Pfeiffer, of Weimar—took this view more than ten years ago, and claimed to have demonstrated an amœboid parasite in humanised and calf lymph, as well as in the contents of the variolous pustule. In 1892 Guarnieri, of Pisa, came forward with a paper based on the examination of the inoculated rabbit-cornea. By selecting this locality he was able to observe the histological effects of vaccination uncomplicated by the vascular phenomena of inflammation. In the epithelial cells of the cornea he found peculiarly staining bodies, varying from the size of a micrococcus to about half that of an epithelial nucleus. He considered that he had demonstrated amœboid movement and reproduction processes in these bodies, and founded for them a new genus and species of Protozoa, to which he gave the name of *Cytoryctes vaccina*. I cannot at this late hour discuss the voluminous literature that has since sprung up.

\* Now altered in accordance with the law of biological nomenclature to *Piroplasma*.

Some observers look upon the Guarnieri bodies as mere fragmented and hyperchromatic nuclei of wandering leucocytes (Salmon, *Ann. Pasteur*, 1897). Others consider that similar bodies can be produced by all sorts of irritants applied to the cornea, and that they are in no wise specific to vaccinia (Ferroni and Massari, *Riforma Medica*, 1893, and *Bulletin dell' Accademia, Catania*, 1895). One of the most painstaking workers in this field—Armand Hüchel—has been led to the view that though not the actual parasite, the bodies are the products or results of its presence. Dr. Gustave Mann, of Oxford, who has published in the Supplement to the 28th Annual Report of the Medical Officer of the English Local Government Board a very full description of the histology of the vaccine process, has failed to convince himself that the Guarnieri bodies stand in a causal relation to that process. The opposite view is held by v. Wasielewsky, one of Pfeiffer's pupils. As the result of a thoroughgoing experimental inquiry (*Zt. f. Hyg.*, Vol. 30) he has come to the conclusion that the bodies described by Guarnieri are really parasites and the cause of vaccinia. He has cultivated them through forty-three generations on the rabbit's cornea, failed to produce them with inactive lymph, and never missed them when he used a vaccinally active material. [Since writing the foregoing lines I have learnt that Guarnieri has within the last few weeks (December, 1901) claimed to have cultivated his parasite by means of the collodion-sac method, in the peritoneum of rabbits.]

Through the kindness of Dr. Gustave Mann I am enabled to show some of his beautiful preparations illustrative of the various stages of the development of the vaccine vesicle in the calf. In some of them, Guarnieri bodies can readily be made out [demonstration]. It now only remains for me to thank the Section for the patience with which they have listened to this prolonged exposition.

ART. VII.—*The Diagnosis of Scarlatina.*<sup>a</sup> By J. MARSHALL DAY, M.D. Univ. Dubl.; Resident Medical Officer, Cork-street Fever Hospital, Dublin.

THE diagnosis of scarlatina has now become a far more difficult matter than formerly, when the disease was of a severer and better marked type. From time to time cases are admitted to hospital in which the diagnosis is so very doubtful that a few remarks on the points on which to rely in coming to a decision may not be out of place.

The following may be related as a sample case :—

M. B., aged six years, was admitted to Cork-street Fever Hospital suffering from whooping-cough. On the seventh day after her admission her temperature went up to 100°; she vomited, and her pulse was 132. There was a redness on the pharynx, tonsils, and hard palate; there was a very slight browning of the flexures of the arms; no distinct rash could be observed on the body, except slight redness on the backs of the hands, the sides of the fingers, and at the flexures of the groins. The next day her temperature was 99°, pulse 128, and the child was apparently all right. The diagnosis then made was scarlatina simplex, but there was considerable doubt about the correctness of this opinion until it was confirmed by the onset of peeling on the sixteenth day, and on the 22nd by distinct signs of nephritis, with blood and albumen in the urine.

The chief symptoms of scarlatina are—vomiting, sore throat, elevation of temperature, frequent pulse, and rash.

(1) Actual vomiting, or a distinct feeling of nausea is nearly always present. In fact, I found this symptom prominent in over ninety per cent. of the cases admitted to Cork-street Fever Hospital. One must, however, discount it as a symptom in young people who are subject to attacks of nausea from various causes.

(2) Children so seldom complain of sore throat that unless one follows the golden rule of always looking at the throat when examining a child, this symptom may be overlooked. One may find in severe cases that the patient swallows quite well, but the converse also holds good, and

<sup>a</sup> Read before the Section of Medicine in the Royal Academy Medicine in Ireland, on Friday, January 24th, 1902.

a simple relaxed throat is often accompanied by troublesome dysphagia. In examining the throat, get the child well wrapped up and facing a good light, when, if scarlatina be present, the red punctiform appearance on the pharynx, soft palate, tonsils and hard palate, will be readily seen. The rash is not so distinctive on the inside of the cheeks as it is in the case of measles. In mild cases there is often a peculiar dull, yellowish whiteness of the hard palate to be seen on the second day. I believe, however, that the rash on the hard palate is diagnostic, especially in cases of scarlatina *sine eruptione*.

(3) At the commencement the temperature varies from  $100^{\circ}$  to  $104^{\circ}$ . It falls the next day, rising again in the evening, but not so high, and, following this course, generally becomes normal on the eighth to the tenth day. In mild cases it may become normal on the third day.

(4) The pulse-rate is more characteristic than the temperature, as even in the mildest cases it is over 120, generally 140 to 160, and we find that even after the temperature becomes normal, the pulse-rate remains higher than normal; for instance, a mild case of scarlatina as M. B., aged six years, on the third day temperature was  $99^{\circ}$ , pulse 108, and on the fourth day the temperature was  $98.6^{\circ}$ , pulse 100.

(5) The rash in scarlatina is never seen on the end of the nose, or around the lips—*i.e.*, in the circumoral zone. It is almost invariably out before the third day. I only once saw it delayed until the third day, and that was in the case of a child who was admitted to the hospital suffering from convulsions, but after diligent packing, the rash appeared and the convulsions ceased. It varies very much in degree. In the very mild cases there exists a fine punctiform rash on the tonsils, the hard and soft palates, and over the surface of the body where the skin is softest, such as the flexure aspect of the arms, the sides of the chest, the lowest part of the abdomen, the upper part of the thighs, and in the axilla. It can also be seen on the backs of the hands, the sides of the fingers, and on the dorsal aspect of the foot. When the elbow is flexed a browning along the folds of the skin is noted, and a



similar condition is observed at Poupart's ligament, and also, but not so frequently, at the backs of the knees. This browning persists after the rash fades, and is present with red puncta on the lower limbs.

I shall now allude to a few other important points in relation to scarlatina before coming to the differential diagnosis.

Sweating is uncommon, but may be present in persons of rheumatic tendencies. The erythema, often seen in such cases, is generally of an evanescent nature, comes and goes, does not present the punctiform appearance, and is generally most intense on the chest.

The tongue in the early stages is coated, sometimes heavily, but later on the injected papillæ show through, and it becomes stripped, and then the true "strawberry" tongue, with the prominent fungiform papillæ, is well marked. One must especially distinguish cases where the tongue is covered with a slight fur, and the filiform papillæ are showing on the third or fourth day of the illness; a tongue with these appearances generally accompanies gastric catarrh.

When doubtful cases of scarlatina come under observation the course of examination I adopt is as follows:—First, the question is asked, has the patient had scarlatina before? If the answer be in the affirmative, and the history of the attack be definite, I put scarlatina out of court, as I cannot call to mind definite, satisfactory, undoubted cases of a second attack of scarlatina accompanied by rash, although, of course, I admit, one may have scarlatina, *sine eruptione*, as a second attack. I then examine for (a) rash on the soft and hard palates, (b) browning of the flexures, (c) rash on the backs of the hands, or the sides of the fingers, (d) stripping of the tongue, and (e) reddish spots, smaller and more acuminate than rose spots, on the lower limbs. These, with a history of vomiting or nausea, are, in my opinion, sufficient to justify a physician in mentioning scarlatina and suggesting isolation.

With regard to the important question of isolation, one must, moreover, remember that mild cases of scarlatina often do not show definite signs of peeling until three

weeks after the onset of the rash, and then the peeling may take the form of a polishing of the tips of the fingers, a roughness at the flexures of the joints, and of the chest walls, with, later on, a stripping of the feet. The milder the case the longer it takes for desquamation to make its appearance. The desquamation in scarlatina is peculiar. It may commence on the sixth day, or be delayed until the eighteenth or twenty-first day. It is not a definite proof of scarlatina, but when one finds the tips of the fingers polished, and desquamation on the trunk and extremities which commenced in small pin head points and has spread centrifugally, one may as a rule diagnosticate scarlatina.

Otorrhœa coming on without a definite cause is often the first symptom of scarlatina brought under one's notice, and when one meets such cases among children one should always remember scarlatina, and look out for peeling. Such cases are, I believe, very infectious. I may pass by acute nephritis or dropsy as being a well-known sequela of scarlatina.

I will now briefly consider the diseases with which scarlatina may be confounded, and will endeavour to put them in the order of frequency of mistaken diagnosis—viz., Rôtheln, measles, septicæmia, urticaria, erythema, rheumatic fever, meningitis, enteric fever, and lastly, drug-rashes.

*Rubella or Rôtheln.*—Vomiting is not an initial symptom in this disease, and only an occasional coincidence. The rash is usually the first sign of the disease; it appears all over the face and body, as reddish brown spots, slightly raised, brighter than in measles, but not so bright as in scarlatina, or it simulates the rash of the latter, without its punctiform appearance or the browning at the flexures. In Rôtheln, as in scarlatina, the rash is present on the throat, similar in appearance to that on the trunk. The peeling of the tongue is absent. The glands in the post-sterno-mastoid and axillary areas are enlarged, and often also in the groins; still this point is of no diagnostic value in dealing with children who are the subjects of chronic enlargement of the lymphatic glands.

In Rôtheln the temperature, as a rule, is only slightly

elevated for the first twenty-four hours; still I do not think much reliance can be placed on the character of temperature as a point in diagnosis. The pulse is not frequent as in scarlatina. The patient does not feel ill in proportion to the amount and colour of the rash. Slight peeling has been seen after the rash has disappeared, but it is not similar to that which I have described as characteristic of scarlatina. The illness may be regarded as at an end when the rash has disappeared.

*Measles.*—In measles there are the catarrhal symptoms, the appearance of the rash on the fourth day on the face and upper parts of the body, and next day on the lower limbs; raised, reddish brown, crescentic spots, coalescing as the rash develops. The appearance of the rash on the buccal mucous membrane is typical. In some cases of scarlatina there may be a rash on the arms and chest very like measles, but, on further examination, one generally finds it to be quite characteristic on the lower part of the body and the lower limbs.

*Septicæmia*, or septo-pyæmia, may be ushered in with a rash which it is often almost impossible to distinguish from that of scarlatina. As a rule it is very intense on the arms and legs, and middle triangle of the body, is darker in colour, and does not present a punctiform appearance. Oftentimes one cannot distinguish the so-called scarlatina maligna from septicæmia.

*Urticaria* frequently presents a diffuse, red rash over the body and limbs, but at places one can detect the characteristic wheals, while the rash is very itchy, rapidly comes and disappears, and often reappears.

*Erythema* is a very rare disease, and presents a sudden blush, confined mostly to the body, is not often seen on the legs or the arms, seldom on the hands, and is evanescent. There are no throat symptoms, and no constitutional disturbance.

*Rheumatic fever* is a disease which may accompany scarlatina, or in which there may be a sore throat, sweating, reddish patches on the body and the arms, definite arthritis, or vague pains in the joints, as is especially the case when the disease occurs in childhood. The differential

diagnosis in favour of rheumatic fever depends upon the absence of the circumoral and nasal white zone, of the rash on the hard palate, and upon the presence of stiffness of the muscles of the neck, enlargement of the tonsils, and arthritis.

*Meningitis*.—I have seen cases of the malignant type of scarlatina mistaken for meningitis, and when one considers the extremely infectious nature of the former disease it behoves us to be very careful. In scarlatina there are great restlessness, semi-consciousness, a purple or dark red appearance of the throat, with slight swelling, great dryness of the tongue, cold, pinched extremities, with high internal temperature, and a dark brown or petechial rash in patches on the arms, chest, and groins. A history of sudden onset, frequent vomiting, the absence of retraction of the head, or of the abdomen, and peculiar odours off the breath, with the rash, &c., as above, makes the diagnosis easy, if the two diseases be kept in mind.

*Enteric fever* is often ushered in with vomiting and a sore throat, accompanied by a rash on the chest and abdomen, and sometimes on the arms. The diagnosis rests on the patient being more ill than one would expect from the character of the rash, on the appearances of the throat, on the temperature being very high, on there being a foul, faecal odour from the breath, and on the skin being moist and sweating. In a few days the abdomen becomes tympanitic, rose spots appear, and the diagnosis is confirmed. Still one must remember that there is a close relation between the two diseases; that they may be concurrent, that patients suffering from enteric fever are thereby rendered more liable to contract scarlatina, and, lastly, that in severe cases of scarlatina intestinal ulceration may be present similar to that in enteric fever.

I remember an interesting fact occurring some years ago in relation to these diseases. Enteric fever of a severe type broke out in a school near Dublin, and amongst the cases there was one girl who, during the third week of her illness from enteric, became covered with a red rash, chiefly confined to the trunk and thighs, and which very closely simulated scarlatina. She peeled, but she did not

convey scarlatina to any of the other patients in the ward. A year afterwards scarlatina broke out in the same school, and amongst those attacked this girl alone did not present a rash. In other words, she had scarlatina *sine eruptione*.

As regards the fourth disease (lately described by Dr. Clement Dukes), which we are accustomed to call Rötheln with scarlatiniform rash. During the year 1897 there were in Dublin epidemics of Rötheln, scarlatina, and measles concurrent, and although there was some difficulty at times in making a diagnosis we were fortunate in not having an outbreak of Rötheln in our scarlatina wards or *vice versa*.

In that epidemic we treated the so-called two forms of the disease in the same wards, and I did not see any cross infection, although we detained the cases in hospital from seventeen to twenty-one days.

This so-called fourth disease is diagnosticated from scarlatina by the absence of vomiting, the absence of rapid pulse, the presence of enlarged glands, the presence of rash all over the face and body on the first day of the disease, and completely covering the body on the second day. It consists of pink spots, large, but not so bright as scarlatina, with the absence of the browning and the erythema seen in the latter disease, its rapid subsidence, and the absence of sequela.

I may add that Rötheln is not always free from complications, as during the month of February, 1897, several children suffering from this disease died from pneumonia and other complications.

I am of opinion that scarlatina, being a fixed disease which changes its type slowly, is seldom, if ever, contracted twice. Measles is not so definite a disease as to severity or type, and may be contracted a second time.

Rötheln, I believe, is more frequently contracted a second time, and the form of the disease may vary as regards the appearance of the rash.

In conclusion, I may lay down the following rules:—Never attempt to diagnosticate the disease from the character of a rash without seeing the whole of it; never attempt to make a diagnosis by artificial light, and, when in doubt, always act as if the more important disease were present, until its absence be certain.

ART. VIII.—*The Registration of Disease.*<sup>a</sup> By NINIAN M'INTIRE FALKINER, M.D. Univ. Dubl.; F.R.C.P.I.; Diplomate in State Medicine, Univ. Dubl.; Medical Superintendent of Statistics in the Office of the Registrar-General for Ireland.

It has been the custom for the President of this Section to give an Address at the opening meeting. I purpose doing so, following humbly in the footsteps of the distinguished members of the profession who have preceded me, amongst whom the names of Sir Charles Cameron, the late Registrar-General (Dr. Grimshaw), Dr. A. W. Foot, and Sir J. W. Moore, are closely connected with all the efforts that have been made to develop the cultivation of sanitary science in this country.

The name of Dr. T. W. Grimshaw awakens in me feelings that are more or less of a personal character, as his death—alas! too early—resulted in a change in the nature of my professional duties; and I venture here to take the opportunity of thanking the members of the medical profession, collectively and individually, for the help they gave, and the kind interest they took in my promotion to a position which includes among its duties the revision of the Medical Statistics of the country, under the able chieftainship of Dr. Matheson, the present Registrar-General for Ireland.

Before proceeding to the subject of my Address I venture to offer a summary of the work which has been carried out by this Section during the past ten years, during which I had the honour of acting as secretary—that is, from 1891 to 1901.

Ordinary meetings	-	-	20
Special meetings	-	-	5
Council meetings	-	-	61
Average attendance	-	-	25

<sup>a</sup> Being a Presidential Address delivered at the opening meeting of the Section of State Medicine of the Royal Academy of Medicine in Ireland, on Friday, February 14, 1902.

## SPECIAL MEETINGS.

- (1) 1892—Drs. Donnelly and Laffan. "The Grievances of Dispensary Medical Officers."
- (2) 1895—"Re Verdict against Dr. Hadden."
- (3) 1895—"Infectious Diseases Hospital Scheme."
- (4) 1897—"Convalescent Home for Infectious Diseases."
- (5) 1898—"To try and get through unconcluded business."

## RESOLUTIONS SENT TO COUNCIL.

- Re* Oaths Act. Hon. Sec. General meeting.  
*Re* "Surplus Funds." Dr. Donnelly. Council meeting.  
*Re* Infectious Diseases Hospital.  
*Re* Convalescent Home for Infectious Diseases. General meeting. Sir C. Cameron.  
*Re* Grant to Sanitary Congress, 1878.  
*Re* "Tuberculosis Congress." Dr. T. W. Grimshaw.  
*Re* To hold a General Meeting of Academy on Prevention of Tuberculosis. Council meeting.  
*Re* Sub-Committee to Investigate Distribution of Cancer in Ireland. Dr. Martley.  
*Re* Central School of Pathology in Connection with Lunatic Asylums. Dr. Dawson.  
*Re* Notification of Tuberculosis. Council meeting.  
*Re* Infant Feeding. Dr. G. P. Cope.

## PAPERS.

- During this period I had the pleasure of making communications on the following subjects to the Academy:—  
 1891—The Fifth Year of Medical Education.  
 1892—Should Primary Syphilis and Tubercular Phthisis be Notified under the Infectious Diseases Act?  
 1893—Note on a Question of Public Health.  
 1893—The Oaths Act, Cap. 46, Sec. 5.  
 1894—Public Practice.  
 1894—Primary Syphilis in Young Children.  
 1895—The Education of Sanitary Sub-Officers.  
 1895—Small-pox in a Family, containing members vaccinated, re-vaccinated, and unvaccinated.

The Presidents that I had the honour of serving under

were:—1891-3, E. MacD. Cosgrave; 1893-5, Dr. Edgar Flinn; 1895-7, Dr. J. M. Redmond; 1897-9, Dr. H. C. Tweedy; 1899-01, Sir C. Cameron, C.B.

From these statistics I, therefore, claim the share this Section had generally, (1) in promoting the interests of Public Health in Ireland, (2) the foundation of the Ben-eavin Convalescent Home, (3) the organisation of the Dublin Congress on Tuberculosis, and (4) the successful endeavour to gain an introduction into Act of Parliament to enable Dr. Dawson's scheme for formation of a Central School of Pathology in connection with Linnatic Asylums in Ireland to be carried out.

The Registration and Notification of Sickness was brought before the public by Dr. Arthur Newsholme in a paper read before the Royal Statistical Society of England in the year 1895, from which I have borrowed the following abridged history. In this paper he pointed out that mortality is not necessarily a correct index to the morbidity of a community. Mortality statistics necessarily ignore everything that precedes the close of life:—

The history of the attempts which have been made to establish a National Registration of Sickness appears to have originated with Mr. John Bellers in the beginning of the 18th century. It was again urged in 1732 by Dr. Clifton, Physician to the Prince of Wales, with special reference to hospitals. Dr. Rumsey, in 1844, in his evidence before the Medical Poor Relief Committee of the House of Commons, suggested a comprehensive plan for the uniform registration of the sickness which affects the poorer classes. Dr. Liddle, subsequently Medical Officer of Health for Whitechapel, proposed amended forms for the weekly medical returns, made by their medical officers, to the Boards of Guardians, and the utilisation of these returns in general sanitary inquiries. About the same time it was suggested in the *Sanitary Review* by Sir B. W. Richardson that these returns might easily, with a few obvious modifications, be employed as a basis for the National Registration of Disease, especially as a record of epidemics. This article further suggested the appointment of a Registrar-General of Diseases in London as the



central authority, to whom the district returns after local use should be forwarded for digest and publication.

Dr. B. W. Richardson was, however, the first to carry any scheme for notification and registration of sickness into actual practice. The work he had performed with his 44 volunteer observers was tabulated in the "Journal of the Public Health and Sanitary Review" for 1855. In 1857 the work was taken up by the Metropolitan Association of Health Officers. The returns were furnished voluntarily and gratuitously by the respective medical officers of hospitals and dispensaries—the general Board of Health undertaking to print the returns.

In 1858 this effort collapsed. In 1860 Dr. Ransome organised an effort by means of the Sanitary Association of Manchester and Salford. In this report the number of deaths among the cases reported were stated. From this the work was taken up by the Social Science and the British Medical Association, as the result of a paper read on the subject by Dr. Rumsey. A committee was formed of the former Association, composed of Drs. Acland, Farr, Greenhow, Southwood Smith, and Messrs. John Simon and Edwin Chadwick.

At a meeting of the Lancashire and Cheshire Branch of the British Medical Association, held on 24th of October, 1862, it was resolved that a sub-committee be appointed "to consider and report on the best means of carrying out the registration of disease in large towns. A committee of the whole British Medical Association was appointed in 1865, at the instance of Dr. Ransome, and for ten years he prepared valuable reports.

In Dublin the British Medical Association adopted the form proposed by the committee appointed in 1868 for the uniform registration of disease. In 1869 Dr. B. W. Richardson headed a deputation who waited upon the President of the Poor Law Board. Mr. Goschen received this committee, and agreed with them on the importance and utility of the work, but pointed out that care should be taken not to impose additional labour on the poor law officers, and that the nomenclature of disease used should be uniform. The committee recommended that a deputation of

the British Medical Association should also seek an interview with Mr. Goschen, and should be instructed to state : (1) The importance to the public and to science of such a registration of disease ; (2) the success of the scheme adopted by this Association ; (3) that the method adopted provides for a uniform nomenclature of disease ; (4) that it need not entail any additional labour on the poor law medical officers ; (5) that the appointment of registration officers (medical) would not only facilitate the registration of disease, but would greatly improve other sources of State Medicine.

At the meeting of the British Medical Association in 1870 a deputation, consisting of Drs. Rumsey and Ransome, was appointed, who again interviewed Mr. Goschen, who referred them to a Royal Sanitary Commission, whose report appeared in the spring of 1871. Nothing practical was the outcome of their labours.

The British Medical Association continued the crusade, and a memorial was presented to the President of the Local Government Board in 1874, a petition for a national system of "Registration of Disease" being laid before the House of Commons by Dr. (now Lord) Playfair.

In the supplement to the thirty-fifth Report of the Registrar-General for England, Dr. Farr, in reference to the registration of sickness, says : "What is wanted is a staff officer in every county or great city with clerks to enable him to analyse and publish the results of the weekly returns of sickness."

Whatever may be said as to the possibility of this elaborate, ambitious, and perhaps inconsiderate scheme, as regards the over-worked medical practitioners, on whom was placed the burden of performing the work as a voluntary tribute to the State, those, and the others who preceded them and helped them, no doubt deserve the credit of the Act which was passed in the year 1889.

I do not propose in any way to criticise the administration of this Act, and content myself by offering, with the kind permission of the Registrar-General, the summaries of the notification reports which were published in the weekly returns which were issued from his department in the year 1901.

TABLE showing, for the Year 1901, the Number of Notifications of, and the Number of Deaths from, the under-mentioned Diseases, with the Annual Rates per 1,000 of the Population represented by Total Notifications and Total Deaths, respectively, for Dublin City, Rathmines Urban District, Pembroke Urban District, and Belfast City.

CITIES, &c.	Population, middle of 1901	Notified Cases of						Total of the foregoing		Annual Rate per 1,000 of population	Deaths from						Total of the foregoing	Annual Rate per 1,000 living
		Small-Pox	Scarlet Fever	Diphtheria	Typhus Fever	Enteric Fever	Continued Fever	Small-Pox	Scarlet Fever		Diphtheria*	Typhus Fever	Enteric Fever	Continued Fever				
Dublin City	291,190	—	528	193	31	797	200	1,749	6.0	—	21	32	3	85	6	147	0.5	
Rathmines	32,722	—	84	27	—	47	17	175	5.3	—	5	3	—	8	—	16	0.5	
Pembroke	25,844	—	45	29	1	45	17	137	5.3	—	2	7	—	8	3	15	0.6	
Belfast City	351,083	5	369	434	15	2,526	1,350	4,699	13.4	1	13	65	8	341	26	454	1.3	
TOTAL	700,839	5	1,026	683	47	3,415	1,584	6,760	9.6	1	41	107	11	437	35	632	0.9	

\* Including membranous croup.

In summarising the returns of notification from the sanitary areas who favour the Registrar-General with the information—namely, Dublin City, Belfast City, Rathmines Urban District, and Pembroke Urban District—I found that the diseases known at present in the reports of the Registrar-General as the principal zymotic diseases, were not uniformly notifiable in all these districts. For instance, measles is notifiable in Dublin City and Pembroke Urban District, but not in Belfast City or Rathmines Urban District; so that my statistics deal only with those diseases in which there is a uniformity of action as regards the sanitary authorities. I do not, of course, want to claim for this table any precise statistical value, but it does demonstrate the fact that, with uniform and extended notification, and collection and registration of these facts, important information would be gained.

In conclusion, I may say that as a sanitarian and a statistician I deplore that I have not the information that would enable me to present these unambitious tables in a complete form. I would like to be able, even for these four areas, to give correct statistics of the relation of mortality to morbidity, for all preventable diseases, including tuberculosis, also for influenza and cancer. Under the Act of 1889 sanitary authorities have the power of paying for this information, and in certain instances they hesitate to do so. Can that hesitation be removed by assuring them that by so doing they will obtain all information as to the existence of preventable diseases, and also will accurately gauge the relation of the mortality to the morbidity of any disease?

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#### SODIUM CITRATE IN DIABETES.

THIS drug in dosage of 5–10 grams (3j½–3ijss.) has been found by P. Dalche and M. Carteret (*Bull. générale de Thérapeutique*, Nov. 8, 1901) to be a valuable adjuvant to more powerful remedies in causing a diminished excretion of sugar. It does not upset the stomach, as its decomposition sets free citric acid, which is well borne. It may cause diarrhoea. In the urine, besides lessening the sugar, it causes decrease in the urea, and increase in the phosphates and chlorides.—*Med. News*, Jan. 11, 1902.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*An Introduction to the Bacteriological Examination of Water.* By W. H. HORROCKS, M.B., B.Sc., Lond.; Assistant Professor of Military Hygiene in the Army Medical School, Netley, &c. London: Churchill. 1901.

THE author of this book of close on 300 foolscap 8vo pages is decidedly modest in his selection of a title. "Treatise" would have been more accurate than "Introduction." Data collected from various sources have been judiciously worked up with the author's own analytical and experimental results into a fairly homogeneous and complete system. Whoever has mastered it, and learnt to apply the methods laid down, will have acquired a competent knowledge of this hygienic process, the delicacy of which is now admitted to be far greater than that of the corresponding chemical test—so delicate that it admits of the detection of as little as one part of sewage in a million of pure water. The scope of the book can, perhaps, best be gathered from a brief summary of the contents of the sixteen chapters into which it is divided. Unfortunately the titles of these have been badly selected, and give only an imperfect idea of the real contents. The first chapter, headed "The Collection of Water," opens with a consideration of the relative merits of the chemical and bacteriological methods of water analysis. The author quotes Hersæus' results as showing that oxidation of ammonia and reduction of nitrates and nitrites to ammonia may be going on side by side. It is a pity that these results, obtained so far back as 1886 by means of impure cultures, should be given so prominent a place, whilst the more complete and satisfactory work of Winogradsky is only mentioned, and the important data col-

lected by Burri and Stutzer, by Beijerinck and others, on de-nitrification are not quoted.

The second part of the chapter is devoted to its proper subject—the collection of water samples—and here we notice that although we are told that “the samples should be examined immediately after collection,” there is no list of the instruments, glass-ware, &c., with which the operator must be provided in order to make his cultures on the spot, nor do we find any mention of “Formalin” as a ready method of sterilising bottles for the collection of samples, although, owing to the high disinfecting powers of its vapour, is it infinitely preferred to the sulphuric acid prescribed, which, in addition to being difficult to handle, acts only on the part of the bottle with which it is actually in contact.

Chapter II., dealing with the quantitative bacteriological analysis of water, leaves much to be desired. It is either too detailed, or not detailed enough. The beginner will not find the statements made as to the reaction of the nutrient gelatine sufficiently explicit in the absence of all information as to the relative value of the indicators. To the expert the information given will be unnecessary. For example, of what use is it to say that “Up to the present time the quantitative analyses of most sources of water supply have been made by means of *faintly alkaline* gelatine-peptone plates; consequently, if it is desired to compare the results with previous analyses, this medium must be used?” The term “faintly alkaline” conveys of itself no accurate idea of what is meant. Not a syllable is said about Eyre’s invaluable work on the standardisation of nutrient media—a great opportunity lost, for, if there is any occasion on which the value of a numerical expression of the reaction of one’s nutrient gelatine cannot be over-estimated, it is in water analysis.

The third and fourth chapters contain data drawn together from various sources on the Multiplication of Micro-organisms in water, the influence of temperature, aeration, light, movement, sedimentation, chemical composition and electricity on the number of bacteria in snow, ice, hail, rain, rivers, wells, upland surface waters, &c.

The same objection holds good here. The data are either insufficient or superfluous. They do not serve to give an accurate idea of the present state of knowledge, and the principle on which the citations have been made is quite obscure. The experiments of Sirotinin and Zagari on the impoverishment of artificial media by the growth of certain microbic species have assuredly no bearing on the behaviour of water bacteria in their natural medium. Again, the citations are made without reference to source. True, there is a bibliography at the end of the book, but it does not contain references to many of the papers quoted in the text. In a future edition Mr. Horrocks would do well to cut out most of these citations. Experts know how to get at the literature for themselves. Learners need only the conclusions. Partial, uncritical and irrelevant excerpts are of no value—quite the reverse, for the mass of undigested detail tends to bewilder and weary the reader.

The next chapter is dubbed with the cumbrous title "On the relation of quantitative bacteriological analysis to filtration of water through sand." It contains an amount of information culled from various sources as to the construction and cleansing of the large sand filters used for purifying town water-supplies. What this has to do with water-analysis is not very evident, for whilst the fact is undoubted that the efficiency of sand-filtration is most effectually controlled by daily bacteriological analysis of the yield of each bed, the general question of the *modus operandi* of sand filters can hardly be said to come in under water analysis. The same may be said of the account of Nitrifying and Denitrifying Organisms in Chapter VII.

In dealing with the qualitative aspect of bacteriological water analysis Mr. Horrocks proceeds as follows:—He divides all the bacterial organisms that occur in water into three classes, those that are usually found in pure water, that are common in sewage, but are rarely found in pure water, and those that are associated with specific disease—the latter including only typhoid and cholera. The first class is sub-divided into twelve groups which have no constant criterion, but are the outcome of an attempt to frame a "natural" classification. The first group com-

prises the fluorescent bacteria, save *B. fluorescens* "*putridus*," which is placed amongst the organisms characteristic of sewage, without, however, giving any satisfactory reason for so regarding it. He does not even tell us whether it does or does not liquefy the gelatine, and we are at a loss to know in what respect it differs from the fluorescent bacteria described as occurring in the purest waters. The second group contains the *B. aquatilis sulcatus* of Weichselbaum, together with another *B. aquatilis sulcatus*, for which no authority is given. As it liquefies gelatine and forms spores it clearly has no place in this group. The third group includes the three varieties of the "potato-bacillus," together with *subtilis*, *mycoides* and others. In group four are comprised the liquefying non-sporing bacilli that so rapidly destroy gelatine plates. It shades off by imperceptible gradations into the *Proteus* group, which, however, is included by the author amongst the organisms characteristic of sewage—a view with which the present writer cannot agree, as he has repeatedly observed typical *Proteus* colonies, not merely *P. vulgaris* but *P. Zenkeri* and *mirabilis*, in cultures made from water of indubitable purity. Group V. contains all bacilli forming red pigment, Group VI. all that produce yellow colonies, Group VII. all the violet species. Group VIII. has no criterion whatever assigned to it. We are merely told that it includes "the *B. albus* of Eisenberg, *B. ubiquitous* of Jordan, *B. aquatilis* [the fourth of this name!] of Lustig, and *B. umbilicatus* of Zimmermann." The brown organisms are lumped together in Group IX., which might have been made to include *Streptothrix dichotoma* [*nigra* of Gasperini] as being often found in ground-water, and producing a fine brown pigmentation of the gelatine. Group X. comprises the micrococci irrespective of colour. It does not include Houston's cocci obtained from soil washing and sewage. Yet who shall say where the line is to be drawn between the harmless water cocci and those significant of recent and dangerous pollution? The eleventh and last group contains some of the *Vibrios* and *Spirilla*, the cholera organism and its allies being treated of elsewhere. It is hard to understand what reason



could have induced the author to place the *Vibrios* and *Spirilla*—organisms which are notoriously absent from pure water, being the very type of “gross feeders” occurring in putrid blood, foul swamps, and decomposing sewage—in the class of “micro-organisms found in pure waters.” This is exactly what they are not. One cannot help regretting, after a perusal of this chapter, how much more instructive it could have been made had Mr. Horrocks confined himself to his own personal observations of the very numerous plate cultures which he must have studied, and refrained from sending to Král for subcultures, altered, no doubt, by many generations of growth on artificial media, and trying to harmonise them with the descriptions of the respective authors.

The part of the book (Chapters VIII. to XII.) dealing with the micro-organisms characteristic of sewage is by far the most interesting and valuable, though relatively little of it is the author's own. Here we have developed the new doctrines put forward by Klein regarding the significance of *B. enteriditis sporogenes*, and by Houston regarding that of *Streptococci*. Whether these views will stand the test of time and re-investigation remains to be seen. The chapter on *Bacillus coli* only shows the inextricable confusion in which this organism seems destined to be plunged. On page 94 the author speaks of varieties that slowly liquefied the gelatine; on page 90 he mentions five varieties, all forming typical colonies on gelatine, but each departing from the type in other respects. He suggests that these varieties may be derived from typical forms by long residence in water under unfavourable circumstances. But serum tests give no countenance to this view, and tend to show that each “variety” is specifically distinct. Indeed, the introduction of serum tests seems to have done no more than render the confusion worse confounded. Until some final agreement has been arrived at as to what constitutes *Bacillus coli* its value as a factor in determining the character of a water sample must largely depend upon the “personal equation” of the analyst.

To Mr. Horrocks we look for guidance through this maze, and we look in vain. In discussing the value of *B.*

*coli* as a sign of sewage contamination, he quotes [p. 103] Kruse, v. Freudenreich and Miquel, Levy and Bruns, Weissenfeld, Houston, Pakes, Blachstein, &c., &c., but we fail to find any original observations which would tend to facilitate the mental labour of the working bacteriologist who, face-to-face with "coliform" organisms on his phenolated gelatine plates, asks himself, "What significance am I to attach to them?"

This reproach does not, however, extend to the author's treatment of the all-important subject of the typhoid bacillus, where, on p. 205, he suggests for its isolation a modification of Parietti's method, combined with the use of glucose-litmus-agar plates, which seems likely to be very useful. Piorkowski's urine-gelatine method seems to have proved unsatisfactory in his hands, as it did in those of the present writer. Finally, the results of a somewhat laborious piece of original work on the varieties of *coli* obtained from *typhoid* stools may be quoted:—" (1) As regards the appearances of the cultures on the various media: the varieties of *coli* in typhoid stools cannot be distinguished by cultural characteristics from the varieties of *coli* found in healthy stools; (2) As regards reaction to anti-typhoid serum: the varieties of *B. coli* isolated from typhoid dejecta show much greater sensibility to agglutination than the varieties of *B. coli* found in normal stools. Consequently, if cultures of *B. coli* isolated from suspected water-supplies are found to come within the typhoid range of agglutination there appear to be fair grounds for assuming that the water-supply in question has been polluted with typhoid dejections." The fact is undoubted, the validity of the inference is highly questionable. The serum reactions of a micro-organism may be greatly altered by residence in water—the specific serum that originally agglutinated it may lose its power over the same organism after sojourn in that medium. *Per contra*, increased sensitiveness may be acquired through the same cause.

The interest of Dr. Horrocks' work has caused us to dwell longer upon it than is usual in the case of a book of its dimensions. We have not been sparing of its faults,

yet, all things considered, it will, we venture to predict, make for itself a place on the book-shelf of every practical bacteriologist.

E. J. McWEENEY.

*Operative Surgery.* By JOSEPH D. BRYANT, M.D.; Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College; Visiting Surgeon to Bellevue and St. Vincent's Hospital; Consulting Surgeon to the Hospital for Ruptured and Crippled, Women's Hospital, and Manhattan State Hospital for the Insane; Fellow of the American Surgical Association; former President of the New York Academy of Medicine; President of the New York State Medical Association, &c. In two volumes. Third Edition, enlarged, thoroughly revised, and re-written. Vol. I., pp. 587. 1900. Vol. II., pp. 741. 1901. London: Henry Kimpton.

THE edition before us shows evidences of thorough revision, while much new matter has been incorporated—in fact, it is practically a new work on the subject.

VOLUME I. is devoted to General Principles, Anæsthetics, Operations on Veins, Capillaries, Nervous System, Tendons, Muscles, Bursæ and Bones, Control of Hæmorrhage, Treatment of Wounds, Ligature of Arteries, Amputations, Deformities, and Plastic Surgery.

THIS volume contains no less than 749 illustrations, 50 of which are coloured. There are merely a few points to which we would direct attention in this volume.

Under the head of Hæmostatics we read of the use of Petit's tourniquet and Davy's lever, procedures which at the present time we never see adopted.

Injection and acupuncture are fully described as operative methods for the cure of varicose veins. Direct transfusion from arm to arm for hæmorrhage, and transfusion of blood with and without defibrination, are also fully described. Surely such lines of treatment belong rather to historical than to modern surgery. It seems to us a pity to take up space describing obsolete methods of treatment in a modern text-book. Under the heading "Excision of the Upper Jaw" we read "Partial and com-

plete excisions of the upper jaw are practised." Has "complete excision of the upper jaw" ever been performed in the living subject? We doubt whether it ever has or ever will be done. The treatment for hammer-toe is not fully described according to modern ideas, at any rate in this country. The procedure of subcutaneous division of the lateral and glenoid ligaments, and even the flexor tendons when required, is fully described. This line of treatment is applicable only to the milder and less common forms, while in the more severe forms, and particularly in those of congenital origin, the toe will not come straight even after division of all the ligaments and tendons, and any attempt to forcibly straighten it simply dislocates the base of the second phalanx below the head of the first. The articular surfaces are so much altered that even if they were brought into contact an imperfect result would be obtained. For such forms we surely want more than a mere casual mention of what might be done.

The method of treating in-growing toe-nail by shaving off the healthy and affected soft tissues down to the margin of the nail, and allowing the wound to heal by granulation, is described as "Cotting's" method. In our opinion it was the late Sir Philip Crampton, Bart., who described it.

Volume II. is devoted to Operations on the Mouth, Nose, and Oesophagus, the Viscera connected with the Peritoneum, the Thorax and Neck, Scrotum and Penis, and miscellaneous operations. It is illustrated by 827 plates and figures, 40 of which are coloured. To the following points we would direct attention:—

No mention is made of Butlin's method of operating for lingual cancer, a procedure which seems to us the most radical of any hitherto described.

Figures 897, 899, 900, 901, and 902 are illustrative of "Lumbar" and not "Iliac" Colostomy.

Under Pylorectomy we read, "A healthy margin of not less than half an inch should always be removed at either extremity of the disease." If this healthy margin is indicated by microscopic examination (for which we think it would scarcely be advisable to wait during the

performance of this operation), then the half-inch margin will be safe; but if the indication is that of the naked eye and finger, in the light of present knowledge the incision should be  $1\frac{1}{2}$  to 2 inches from the left or stomach margin of the growth.

On page 859, under the description of Fig. 1060 b, the word "Urethra" should read "Ureter."

On page 873 the word "Urethra," four lines from the bottom of the page, should read "Ureter."

Under the heading of "Taxis for Strangulated Hernia" the following sentence occurs:—"If moderate taxis is not sufficient to reduce a strangulated hernia, a hypodermic injection of morphine may be given at once near the seat of constriction, and the patient put into a warm bath, &c." We fail to see how a hypodermic of morphine and a warm bath could effect the relaxation of, say, Gimbernat's ligament, and thus facilitate the reduction of a femoral hernia, while, indeed, we are doubtful whether, if a hernia is really strangulated, taxis should ever be employed in preference to herniotomy.

In connection with bronchotomy for diphtheria and other acute affections of the air passages, we notice that as a substitute for tubes the author says that the borders of the tracheal opening can be kept apart by passing looped ligatures through them, which ligatures are then tied behind the neck. If this arrangement proves troublesome an elliptical piece can be removed from the anterior surface of the trachea. The substitute of ligatures is good, but, in our opinion, the removal of an elliptical piece from the trachea should never, at any rate in acute cases, be substituted for a tube. After the removal of an elliptical piece from the front of the trachea there must be a great risk of a subsequent aerial fistula, or, if the wound heals, it may so diminish the lumen of the trachea as to produce stenosis.

The use of the rectal bag is still advocated during the performance of suprapubic cystotomy. We think the necessity for its use must be extremely infrequent, and most surgeons have discarded it. It is said that the death-rate is quite as high after vasectomy for hyper-

trophied prostate as after castration; consequently, as the danger is quite as great, and the outcome not so good, castration should be given the preference. While not approving either vasectomy or castration for hypertrophied prostate, we must dissent from the statement that the mortality from vasectomy is as great as that from castration.

Of the two volumes, the second is by far the better. The section devoted to Abdominal Surgery is particularly good.

There is no "Operative Surgery" with which we are acquainted so well illustrated, though the majority of the illustrations are not original.

As regards the personal element the work is somewhat defective.

The exclusion of some of the more antiquated methods of treatment, such as those to which we have drawn attention, and the inclusion of a couple of chapters on such subjects as ovariectomy and hysterectomy—operations which, though gynæcological, many general surgeons have to undertake—would, in our opinion, enhance the value of the work.

The points to which we have drawn attention are but small blemishes in a work dealing with such a wide subject as that of modern operative surgery.

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*Modern Obstetrics, General and Operative.* By W. A. NEWMAN DORLAND, A.M., M.D.; Assistant Demonstrator of Obstetrics, University of Pennsylvania; Assistant Obstetrician to the University Hospital, &c. Second Edition, revised and enlarged. With 201 Illustrations. London and Philadelphia: W. B. Saunders and Co. 1901. 8vo. Pp. 797.

As the first edition of Dr. Dorland's work is not of old date, it is not necessary to review the second edition as if it was an entirely new work. In its present form, "Modern Obstetrics" is an imposing volume of nearly eight hundred pages, well illustrated, and beautifully printed. A number of new sections have been added, in-

cluding chapters on the surgical treatment of puerperal sepsis, infant mortality, placental transmission of disease, the serum-therapy of puerperal sepsis, and the rôle of the liver in the production of puerperal eclampsia—important additions, which will add greatly to the value of the work.

We cannot say that we are uniformly favourably impressed with such portions of the work as we have read. The work strikes us as being rather unequal. Like the curate's egg, parts of it are excellent, but parts provide bad material for assimilation. The treatment of placenta prævia, instead of being the simple and easily-digested one which has furnished such excellent results for the past few years, is so complicated by Dr. Dorland that it would give the most omniverous reader a verbal indigestion. The governing principle of the modern treatment of placenta prævia is a minimum of interference; the governing principle of the treatment recommended by Dr. Dorland is to crowd the maximal amount of interference into the available time.

In discussing the treatment of this condition the author succeeds in confusing his reader, because he has first confused himself. What is meant by the performance of *podalic* or *bi-polar* version? These terms are not synonymous. What is meant by stating that placenta prævia may occur as early as the second month? In contrasting the symptoms of placenta prævia, and of accidental hæmorrhage, with a view to establishing a means of diagnosis, the author tells us that in the latter condition "hæmorrhage persists until the uterine contents are evacuated or the patient perishes." A *post-mortem* diagnosis is undoubtedly better than no diagnosis—so far as the medical attendant is concerned; but is a method of diagnosis which is of avail only after death worth mentioning in a practice of midwifery? The treatment which Dr. Dorland recommends for accidental hæmorrhage is the immediate emptying of the uterus. Ten minutes only are to be allowed for this process. We should have thought that the statistics of the Rotunda Hospital had by this time killed such a line of treatment.

Many other inaccuracies and confusions may be noted

through the book. Convulsions in puerperal eclampsia are said to be typical. The second illustration, representing Schultze's method of artificial respiration is absurd. Dr. Dorland has taken it from another work, though he does not say so, but that is not an excuse. We learn that Credé's method of expulsion of the placenta, or the Dublin method, is also "Kristeller's method." Kristeller may have devised a mode of expelling by expression more things than one, but most certainly his name is associated with a method of expressing the fœtus. Finally, on what principle is pelvic presentation considered under the heading of normal labour?

There are, however, many good points in the book before us. There is a good chapter on puerperal sepsis—though even here there are shortcomings. In the section on serum-therapy, no mention is made of the labours of the American Committee appointed to investigate this important subject. The remainder of the chapter is, however, good, and furnishes a valuable review of modern teaching. There are many and good illustrations. Most of them, it is true, are old friends, but they are none the less valuable.

Dr. Dorland's book is too long, in proportion to the amount of original work it contains. It is too short, in proportion to the amount of modern teaching which it would like to include.

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*The Nordrach Treatment for Consumptives in this Country.*

How to Cure and Prevent Consumption and other forms of Tuberculosis, together with a General Consideration of the Laws governing Health. By JAMES ARTHUR GIBSON. London: Sampson Low, Marston & Co., Ltd. 1901. 12mo. Pp. xv. and 163.

THE first three parts of this very neat and readable little volume have appeared during the past couple of years in *The Nineteenth Century*, and the remaining part in *The Westminster Review*. It is gracefully dedicated by the author "To Consumptives, in the hope that it may be the means of restoring some to health."



The book has a special feature of interest, as the author himself is not a medical man. But he tells us, and we cannot well attempt to dispute the position as viewed from his standpoint, that he learned the disease and its treatment from experience in his own person. "I have learned, by bitter experience, what are the best possible things for consumptives, and what the worst possible." He scouts the idea of describing the method the "open-air cure," and considers that "sanatorium treatment," or "individualising treatment," would be more rational, or at least less deceptive terms. He then tells us emphatically that "It is the treatment of consumption in a specially adapted place, by a specially qualified doctor, who devotes himself entirely to it, and takes only as many cases at a time (Nordrach has only about 50, in spite of the hundreds who want to go there) as he can thoroughly treat, suiting each feature of the treatment to the individuality of each case. It is not sufficient that an ordinary practitioner should pay a visit of a few hours to one of these sanatoria. No doctor in England can understand Walther's treatment who has not made a special study of it; nor can he carry it out unless he is prepared to give up private practice and devote his whole energies to the work. Some go to Nordrach, look over the place, and come away thinking they know all about the cure, and some even write about it. The main feature is the treatment of each case according to its individuality, and how can that be learned by looking at a couple of rooms, the fine cows, the refrigerator, and the steam laundry?" There is a good deal of justice in these remarks. It is also refreshing to us, as we will not, in future, think it so necessary to remember all the rubbish that we have read on the subject from restless members of our profession who take in Nordrach in the course of their holiday tour, and read papers and publish booklets on their return. It also, however, prevents us from assuming to give, in the limits of a review, a just account of the "Nordrach Treatment." But we cordially recommend our readers to read this volume, and judge for themselves.

There is one other point of special interest in the volume to which we must direct our attention before closing. The

author refers to "Consumption. By Henry MacCormac, M.D. Second Edition. London: Longmans, Green, Longman, Roberts & Green. 1865." He goes on to tell us that the author of this volume "fifty years ago held practically the whole truth about consumption when other medical men were groping in the dark." "If this book of Dr. MacCormac, of Belfast, had borne the fruit it should have borne, there would have been few, if any, consumptives in this country. But the book bore little or no immediate fruit; the author was looked upon then (1855-1865) as a crank, and his theories and practice were ridiculed in medical circles throughout the country. He had to bear every kind of persecution that a man in his position could be subjected to; he was neglected and sneered at." Such, we fear, has been the history and personal experience of the founders of all true faiths. It is another example, too, of the vast number of the most important facts and observations in clinical medicine which have first seen the light in Ireland, and were allowed to fade there without recognition.

We cannot close this notice of an important contribution to the clinical literature of consumption without pointing out the fact that Dr. Henry MacCormac lived to see a part of the success of his illustrious son, Sir William MacCormac, who has just been taken from us in the zenith of professional fame, and whose loss we shall long deplore.

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*Golden Rules in Aural and Nasal Practice.* By PHILIP R. W. DE SANTI, F.R.C.S. Golden Rule Series. No. IX. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent and Co., Limited.

We have persistently and consistently railed against the "Liebig's Extract" type of book for students, and the whole Golden Rule Series may be classed under this head. But, though we disapprove the "concentrated essence" as a food for students, we congratulate the author upon having produced the best book of the concentrated essence type that we have come across.

For its size it is the most palatable of the midget series, and its facts are clearly set forth, though, of course, in the

briefest manner, and consequently, in the manner most difficult to assimilate, especially by one not before acquainted with the subject.

If the Golden Rule Series must be written we are glad that it should be in such able hands as those of Dr. de Santi, but we cannot advise students, desirous of learning their work, to read, or attempt to read, any of the series.

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*Quain's Dictionary of Medicine.* By various writers. Third Edition, largely re-written and revised throughout. Edited by H. MONTAGUE MURRAY, M.D., F.R.C.P., &c.; assisted by JOHN HAROLD, M.B., B.Ch., B.A.O., and W. CECIL BOSANQUET, M.A., M.D., M.R.C.P. London and Bombay: Longmans, Green & Co. 1902. 8vo. Pp. 1,892.

EVEN in the present age of medical encyclopædias it will be difficult, if not impossible, to dethrone "*Quain's Dictionary of Medicine.*" All the more difficult now that Dr. Montague Murray's third edition "holds the field."

The general scheme of the work remains unaltered. That is to say, topics of all kinds are discussed in strict alphabetical order. Repetition is avoided by cross references, which have been inserted in large number, and which serve also to bring under the reader's notice articles giving further information on the various subjects.

While special emphasis is laid on the diagnosis and treatment of disease in this, as in former editions, the subjects of pathology and ætiology have been also carefully considered, revised, and brought up to date. The editor in his preface further points out that the recent and ever-increasing incursions of Surgery into the realms of Medicine have received adequate recognition. More space has been allotted to what are generally known as "Special Branches." A judicious pruning of the preceding edition has enabled these additions to be made without unduly enlarging the size of the book. We advisedly write the word "book," for the work is now issued in one portly volume of 1,892 pages instead of two volumes, as was the plan adopted in the case of the second edition published in

1894. The original edition of Quain's Dictionary of Medicine appeared in 1882—just twenty years ago—and was published in a single volume, running to 1,834 pages. The second edition, owing to larger type and much additional matter, ran to 2,518 pages. Space has been economised in the new issue by slightly increasing the width of the columns of type and by using a smaller fount of type. The latter artifice has happily not increased the difficulty of reading for readers with lessening keenness of vision—this is owing to the clear-cut letters which have been employed in type-setting.

It would be impossible, even if it was necessary, to criticise in detail a work like the Dictionary of Medicine. In our review of the second edition, however, we did severely criticise the article on small-pox. We observe that it has been replaced by a practical account of the disease by an entirely new hand—that of Dr. W. Gayton, late Medical Superintendent of Homerton Small-pox Hospital. We regret that Dr. T. Henry Green did not transfer his admirable article on "Inflammation of the Lungs" from page 918 to page 1,295, where "Pneumonia" is most inadequately defined as "Inflammation of the Substance of the Lungs." Surely at this time of day there could not be a less scientific and a more misleading definition, at all events as regards certain forms of the condition known as "Pneumonia."

Dr. Montague Murray and his coadjutors are to be congratulated on the successful completion of an arduous task, and there is, no doubt, a prosperous fate in store for the new edition of Quain's Dictionary of Medicine—a work which should be in every physician's library.

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*Syllabus of Lectures to Nurses.* By ANDREW DAVIDSON, M.D. London: The Scientific Press, Limited, Strand, W.C. Pp. 101. (Alternate pages blank for notes.)

THIS Syllabus will be helpful to medical officers and matrons who are preparing courses of lectures for nurses. It contains headings and notes of sub-headings, and the alternate blank pages allow the lecturer to incorporate his

own ideas. The most useful part is that dealing with the care of the insane. This is a branch of nursing which is generally very slightly handled, and the author, who was for some time Senior Assistant Medical Officer in the Dorset Asylum, has dealt with it fully and in a practical manner.

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*Catechism Series. Botany. Part II. Edinburgh:*  
E. & S. Livingstone. [No date.] Pp. 83.

IN a small space a great deal of information and many technical words are crammed. If used as a text-book this will lead to nothing but "cram"; if used to see how information learned from a text-book may be cast into question and answer form, it may be of use. As far as accuracy and fulness goes, this is quite equal to former numbers of the "Catechism Series."

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*Wellcome's Photographic Exposure Record and Diary.*  
London: Burroughs, Wellcome & Co. 1902.

MESSRS. BURROUGHS, WELLCOME & Co., whose "Tabloids" are so well known to the medical profession, have issued an exceedingly handy and useful little pocket-book and Exposure Record for Photographers, for whom they provide the necessary chemicals for all the various processes in the convenient form of "Tabloids," each containing a definite quantity of the particular agent. The book contains a great amount of general and photographic information in a convenient shape, and while primarily, of course, intended for users of their Tabloids, is almost equally useful to those who make up their solutions in the ordinary way. A somewhat novel feature is a table of the temperatures required in various photographic processes, such as platinotype, carbon and gum-bichromate printing. Another is a list of various places at home and abroad where permission must be obtained by the would-be photographer, and whither to go for such permission. Some 84 pages are devoted to this part of the book, and the remainder to a diary specially ruled for noting photo-

graphic exposures. It is very nicely got up as to paper, binding, &c., and notwithstanding all it contains it measures only  $5\frac{1}{2}$  in. by  $3\frac{1}{2}$  in. by  $\frac{1}{2}$  in. It is an admirable shilling's worth for the careful and systematic worker.

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*Nothnagel's Encyclopedia of Practical Medicine. Typhoid Fever and Typhus Fever.* By DR. H. CURSCHMANN, Professor of Medicine, Leipzig. Edited, with additions, by WILLIAM OSLER, M.D.; Professor of the Principles and Practice of Medicine, Johns Hopkins University, Baltimore, Md. Authorized Translation from the German, under the Editorial Supervision of ALFRED STENGEL, M.D.; Professor of Clinical Medicine in the University of Pennsylvania. Philadelphia and London: W. B. Saunders & Co. 1902. 8vo. Pp. 646.

WITH commendable public spirit and enterprise, Messrs. W. B. Saunders & Company, of Philadelphia and London, have undertaken to publish in ten volumes an English translation and revision of Nothnagel's "*Specielle Pathologie und Therapie*," a work on Practical Medicine which enjoys a world-wide reputation, and ranks second to none among medical encyclopædias.

While this American edition of Nothnagel's Great System of Medicine is under the editorial supervision of Dr. Alfred Stengel, the distinguished Professor of Clinical Medicine in the University of Pennsylvania, each volume is separately edited by a physician who has devoted special attention to the subjects of which it treats. In every case, also, the special editor has been given a free hand in regard to the insertion of additional matter and the incorporation of the very latest literature on his particular subject. The work may, therefore, fairly claim to represent the most modern views of leading American and British specialists in the various departments of Internal Medicine.

It is true that the ten volumes now in course of publication do not represent the entire German work. They have, however, been selected with the special object of meeting the needs of the practising physician. Later on

the special and more strictly scientific volumes of the series will be offered from time to time.

To suit the convenience of the purchaser the publishers have arranged that physicians shall have the option of subscribing for the entire system at one time, or of buying any single volume or any number of volumes separately.

The first volume of the *Encyclopædia* includes Dr. H. Curschmann's splendid monographs on typhoid fever and typhus fever. But it would be quite a mistake to suppose that within its substantial covers we have only Curschmann's work. On the contrary, nearly every page in the monograph on typhoid fever shows Dr. William Osler's handiwork, and with the consent of Professor Curschmann the additions have been made by the editor so as to run smoothly with the original text. In his preface Dr. Osler points out that the chapter on the bacteriology of typhoid fever has been thoroughly revised and new material has been added, particularly in relation to the distribution of the typhoid bacilli in the urine, in the rose-spots, and in the blood. In the chapter on Pathology the important work of Mallory on the histological changes in this fever has been incorporated. That author concludes that, due to the action of a toxin produced by the typhoid bacillus, there is a proliferation of endothelial cells. These cells are phagocytic in character, and the swelling of the intestinal lymphoid tissue is due almost entirely to their formation. The necrosis, he thinks, is due to occlusion of veins and capillaries by fibrinous thrombi, which owe their origin to generation of phagocytic cells beneath the lining endothelium of the vessels. He describes a similar process occurring in the mesenteric glands and the spleen. Mallory's original description may be found in the third volume of the *Journal of Experimental Medicine*. The researches of two other American investigators have been very properly made use of by the editor—namely, Thayer's exhaustive study of the state of the blood in typhoid fever, and Keen's monograph on the surgical complications of the disease.

The editor has practically re-written the chapter on Perforation and Peritonitis, as well as the section on the

Hepatic Complications under the headings—Catarrhal Jaundice, Toxic Jaundice, Abscess of the Liver, Typhoid Inflammatory Affections of the Gall-bladder and Large Biliary Passages and Gallstones. The bacteriological diagnosis is well handled at page 419; the methods of serum-diagnosis are given at page 423. To the section on Treatment, Wright's method of anti-typhoid "Vaccination" has been added at the close of the section on Prophylaxis. In favour of this method, figures are quoted which show that out of 1,705 persons inoculated at Ladysmith and Natal, only 2 per cent. were afterwards attacked, whereas of 10,529 not inoculated, 14 per cent. were attacked. Of those inoculated, the rate of mortality was 0.46 per cent.; of those not inoculated, 3 per cent. died. It is rightly stated that such a method of preventive treatment is naturally most applicable in the case of persons going into a district where the disease prevails, or in the case of armies or other large bodies of persons likely to be attacked by an epidemic of typhoid fever. The fact is not mentioned that the immunity conferred by this preventive inoculation is comparatively short-lived. The symptoms following inoculation are given as "local tenderness and congestion, faintness, possibly nausea, fever, and restlessness." This description is more technical, if less picturesque, than Mr. Maurice FitzGibbon's account of the results of "pig-sticking drill," as typhoid inoculation was called by the Imperial Yeomanry. In his entertaining book entitled "Arts under Arms; An University Man in Khaki," Mr. FitzGibbon writes:—"The common symptoms described were those of great heat—present in any case—followed by a shivering from top to toe, with a splitting headache thrown in, and a general feeling like that of a dog in a wet sack."

The section on Diet contains many valuable and some novel suggestions. Dr. Curschmann lays great stress on the use of mucilaginous soups because of the carbohydrates they contain, and he mentions gelatinous substances, restored to favour by Senator, as an admirable means of shielding the body-proteids. We thoroughly agree with the editor in recommending albumen-water as



a suitable mode of giving egg-albumen freely to typhoid patients. Osler's receipt for preparing it is as follows (page 449):—"The albumen is thoroughly shaken with ice and a small amount of water, and is then drained and flavoured with lemon, sherry, or brandy." We are in the habit of prescribing equal parts of whey and egg-water—the latter being prepared by whipping up the whites of from two to four eggs to a froth, mixing the foam with a pint of cold water, and straining. If a mild stimulant is required, white wine whey may be substituted for ordinary two-milk whey. The author's views on the use of alcohol in typhoid fever generally are, in our opinion, sound. He says:—"In spite of all theoretic objections, alcoholic beverages are still indispensable to the practitioner in the treatment of typhoid fever, as well as in the treatment of acute febrile diseases in general. . . . Although the theoretic explanation is difficult, practically the stimulating influence of alcohol upon the circulation and respiration is established beyond doubt. In addition, it is useful for conserving waste and generating energy. I should not be willing to treat typhoid patients at all in certain stages and conditions without alcoholics. The employment of alcohol naturally requires strict discrimination in every case. In children it is to be avoided altogether, or to be employed only temporarily as a last resort" (page 450).

In the sections on Diet some expressions appear to need interpretation, or at least explanation—for instance, "zwiebach," "aleuronat," "kephyr," Curschmann's recommendation of "finely scraped" salmon or trout, "boiled in salt water," in early convalescence will not be accepted without misgiving by British physicians. Taken as a whole, however, the section on Treatment is excellent, and does not invite hostile criticism.

Curschmann's monograph on typhus fever, which forms the second part of the volume, is based largely upon his personal knowledge of the disease acquired in Berlin, Hamburg, and Leipzig. From 1876 to 1879 he was Superintendent of the Berlin "pest-house," the lazaretto in the Moabit Hospital, and he there enjoyed abundant

opportunities for studying the disease, reports of 677 cases being in his possession. This is interesting, because the old tradition that the British Isles, and in particular Ireland, are the home of the disease still lingers—the author himself, in a brief historical introduction, writes: “Ireland and England, where the disease has always been prevalent.” Truly, old beliefs die hard. Yet it is time that scientific writers disabused themselves of the notion that typhus at present plays any notable part in the nosology of Great Britain and Ireland. For many years back the occurrence of typhus even in Ireland has been diminishing in frequency, and at the time of writing scores of medical students and even of junior practitioners have never seen the disease. The modern literature of this fever is not British, but foreign. Thus, in *Twentieth Century Practice* the article on typhus, published in 1898, is written by a Mexican, Professor Eduardo Licéaga, who states that typhus is endemic in Mexico, and whose account of the disease is founded upon his experiences as President of the Superior Board of Health of Mexico. And now Curschmann's article describes the disease as it is seen in Germany, Poland, and Russia. There is this difference between the writers we have named—Curschmann speaks of “England and Ireland, the classic homes of typhus fever;” Licéaga more correctly states that “throughout the United Kingdom it is manifestly disappearing, as the following figures show:—In Ireland there were 505 deaths in the year 1885, and only 206 in 1891; in Scotland in 1871 there were 1,129 deaths, but in 1890 only 77; in England, also, the disease has markedly decreased.”

In respect of the bacteriological origin of typhus Curschmann speaks with confidence, but he brings us no nearer to a demonstration of the *causa causans* of the disease. In this section we meet with the following sentence (page 484):—“Quite recently, in fact, men (McOxney) have come forward declaring that the blood of typhus fever patients is free from specific micro-organisms.” Reference to the “Bibliography” at the end of the article reveals the identity of “McOxney,” who turns

out to be our distinguished bacteriologist, Dr. McWeeney. Indeed the spelling of proper names is a weak point in the volume—"Cusak," "Jaquot," "Guineau de Mussy," "Lancereaux," "Christioson" (page 630), "Griessinger"—are blots in what is really a very fine monograph on typhus fever. There are two beautiful coloured plates illustrating the rashes of both typhus and typhoid, and the many temperature charts interpolated in the text are very well done.

It is hardly necessary to say that the printing, paper, and binding of the volume are unexceptionable.

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*The Life of Pasteur.* By RENÉ VALLERY-RADOT. Translated from the French by MRS. R. L. DEVONSHIRE. Westminster: Archibald Constable & Co., Ltd. 1902. Two volumes. 8vo.

IN these two interesting volumes are contained the life-record of one of the most conspicuous of the many scientific giants—men of renown—who explored with almost miraculous ability, energy, and success the previously mysterious problems of nature during the latter half of the nineteenth century. "To gild refined gold, to paint the lily," &c., are comparatively poor similes to express the impotence of any surviving reviewer in attempting to add lustre to such a name as that of the immortal scientist of whose personality and endeavours these volumes contain a necessarily imperfect account.

Louis Pasteur was born in the Rue des Tanneurs, Dole, on Friday, December 27, 1822, at 2 a.m.—a truly momentous event in the history of the world. His childhood was happy and stainless, but not brilliant. Like many other boys of genius, he did not take so very kindly to the ordinary routine tasks of the school or college curricula. It is somewhat of a relief to find that no preposterous legends of his miraculous childish performances were invented for the torture of the scientific reader or for the use of the critical pruning-knife of the reviewer. The atmosphere of his father's tannery-yard was, we presume, not romantic; but there was an experimental process continually pro-

ceeding there; and it may have developed scientific curiosity in a way which a fashionable drawingroom, or even a mechanically well-arranged flower-garden, would not have done. An interesting boyish feature is depicted in the account of the home-sickness from which the future Leviathan of science suffered, when he was sent, in his sixteenth year, to prepare for admission to the *École Normale* (Paris), which had been founded by Napoleon in 1808, for the express purpose of training young professors. "Never was home-sickness more acute." "If I could only get a whiff of the tannery-yard,' he would say to Jules Veral, 'I feel I should be cured.'" To most people the longing for the odoriferous emanations of a tannery-yard will probably seem a perverted taste; but to one reviewer, at least, the remarkable development of such a feeling, while pursuing the paths of a more promising ambition, reveals one of the sweetest and most loveable traits of human nature. The indulgent father brought him back and placed him in Arbois College. Before he went to Paris he loved angling; he always detested bird-trapping—another significant fact. He had also very early displayed a great taste for sketching—in schoolboy style. This re-appeared for a time after his return to Arbois. He was there more contented and successful than he had been at Paris: at the end of the year he "took more school-prizes than he could carry." Thence he went to the Royal College at Bésançon, where his industry and reliability gave him the post of preparation master in January, 1841.

In those early years Louis Pasteur's mind was specially affected by the "Essay on the Art of being Happy" of Joseph Droz, and by the *Le mie Prigioni* of Silvio Pellico. But at this period of his life a longing for Paris had become habitual; a kind of secondary home-sickness. On the 26th of August, 1842, he was declared admissible to the examination for the *École Normale*. He was, however, only fifteenth out of twenty-two candidates. In a letter dated December 9, 1842, he writes of the important fact that he was attending the lectures of M. Dumas, the famous chemist. This was the moulding event in his career. We need not dwell further on the details of his early

scientific probational course. His eagerness for verifying every scientific experiment with his own hands is everywhere emphasised. On page 46 we meet with a reference to Louis Pasteur's first great departure from the beaten path of known research—his "Researches on Dimorphism." The term, now so familiar to chemists, was then "not even to be found in the 'Dictionnaire de l'Académie!!'"

The researches in which he had now become so thoroughly immersed—on crystallography, chemistry, and their various relationships—led on to the first great investigation which secured his fame for all time, and exhibited so emphatically the unflagging energy and painstaking zeal with which all his scientific work is indelibly stamped. We allude to his discrimination and separation of the various forms of tartaric acid. The history of this special research forms a genuine chapter in the romance of scientific history. It illustrates the chivalrous devotion with which the love of physical truth pursues the mistress of its affections through all the difficulties which accident or design may interpose.

From that date the biography of Pasteur is the history of scientific progress—in the person of its most successful pioneer. The fruitfulness of his results constitute a feature that raises them to an altitude which we must pronounce unprecedented. We find a place claimed for Louis Pasteur in the Temple of Fame on the same level with Galileo, Newton, and Bacon. Galileo revolutionised astronomical teaching, but his results did not influence terrestrial conditions; the seasons, the weather, the crops, and the physical welfare of humanity were not conscious of any modifications derivable from his brilliant demonstrations. The same may be said of Newton's Law of Gravitation and of his System of the Universe. Bacon, as a large-minded and sympathetic judge of human affairs in their general aspects, gave an almost inspired "charge to the jury" of scientific inquiry of his day. But when he doffed his wig and gown, descended from the bench, and proceeded to manipulate "facts," the results became humiliating—almost pitiable. Pasteur, while laden with

the science of his predecessors, was not over-weighted by them. His mental energy was such that he was able to use all past results and experience in assisting him to penetrate still further into the great unknown territories which till then lay unexplored. It is, of course, utterly unnecessary—indeed, it would be little less than impertinent—to indicate to our readers the incalculable advantages which his contemporaries have reaped, and posterity will continue to reap, from the unselfish devotion of Pasteur's scientific enthusiasm. His researches on the fermentation of grape-juice, on the silk-worm plague, spontaneous generation, on decomposition, on antisepsis, on asepsis, on the "germ theory" of disease, on the establishment of "immunity" by preventive inoculation, &c., &c., are in each of these several domains enough to make his name immortal, and to serve as an example to all future generations of scientists and philanthropists. The labours of the man whose name illuminates every page of the scientific literature of the latter half of the nineteenth century would seem to have left but little more to his successors in the twentieth than to continue his investigations along the lines which he has himself opened up for them.

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*A Manual of Medicine.* Edited by W. H. ALLCHIN, M.D., Lond.; F.R.C.P., F.R.S., Ed. Vol. III.—Diseases of the Nervous System. London: Macmillan and Co., Ltd. New York: The Macmillan Co. 1901.

THE third volume of Allchin's *Manual of Medicine* will be welcomed by readers who have already become acquainted with the contents of the two preceding volumes. This one is devoted exclusively to Diseases of the Nervous System, and the articles themselves have been, generally speaking, written by a younger generation of London Neurologists, whose names are not so well known in medicine as those of the older men whose writings are to be found in the textbooks in common use.

The Physiological introduction is written by Professor Sherrington, and here it must be said that condensation is frequently carried to excess. A great deal of what is

written is explicit enough, but neither to the general practitioner nor to the ordinary student of medicine would many of the sentences carry any meaning. The following may be taken as an example of the condensation and obscurity referred to:—"The *nerve impulse* is the unit of function arrived at by physiological analysis of the neurone. Almost all nervous reactions are ultimately reactions to the environment. They are reflex in the sense that the environment is causally related to them, and that to the environment they return again."

Having said so much in the nature of adverse criticism it is pleasant to record that for a clinical teacher who is already acquainted with the subject no more concise summary of "nervous" physiology could be well devised than that here set forth by this distinguished physiologist.

Dr. William Aldren Turner occupies over one hundred pages in describing "The Neurone in Relation to Disease of the Nervous System," and "Organic Diseases of the Brain and its Membranes."

Having described the neuron and its degeneration, he classifies degenerations according to the Neuronic System primarily involved, and tabulates the General Symptomatology of the diseases thus classified, finally ending up his first section with a brief analysis of the General *Ætiology* of Diseases of the Nervous System. Then comes a chapter on the General Symptomatology of Organic Diseases of the Brain and its Membranes, which is mainly devoted to definitions of the terms used in describing the more common symptoms. The chapters which treat of Diseases of the Cerebral Membranes are very brief, but as Cerebro-Spinal Fever and Posterior Basic Meningitis have been already dealt with in Volume I. by Drs. Hebb and Still, their further description again seems almost unnecessary; the chapter on Sinus Thrombosis is particularly well done. Indeed, it may be truly said that Dr. Turner has an aptitude for methodical arrangement which will ensure for his articles a ready acceptance by busy and practical men. Apoplexy, Hæmorrhage, Thrombosis, Embolism, and Hemiplegia might all be read in the space of half-an-hour, and the information to be gained thereby would

put to shame much more elaborate essays. Encephalitis, Intracranial Syphilis, General Paralysis of the Insane, Tumours of the Brain and Focal Diagnosis bring to an end this series of excellent articles.

Dr. Collier, Pathologist to the National Hospital for the Paralysed and Epileptic, has produced an interesting series of articles on Aphasia and other defects of speech. Here, too, the reader will find himself confronted with methodical writing. Dr. Collier has also written an introductory chapter to the Functional Diseases of the Nervous System, and together with Dr. Colman he is responsible for the bulk of the articles on the Functional Diseases, the best of which are those on Epilepsy and Hysteria.

Dr. J. A. Ormerod, after describing the Morbid Anatomy of the Spinal Cord, briefly details certain general symptoms which frequently present themselves, and depend rather on the locality of the lesion and the function of the part involved than on the nature of the particular morbid process. He is satisfied to divide motor paralysis into the two main types of spastic, associated with degeneration of the upper neuron, and flaccid, associated with degeneration of the lower. He classifies Diseases of the Substance of the Spinal Cord into non-system and system ones, and each individual condition is portrayed with succinctness.

The editor has undertaken the rather difficult task of attempting to unravel the causes and varieties of headache, but, needless to say, the result will not disappoint his readers. This chapter, with one each on Trophoneuroses, Anorexia Nervosa, Raynaud's Disease, Erythromelalgia, and Angio-neurotic Oedema, comprise the total of what the editor has himself compiled in the present volume.

The concluding section is devoted to a short article by Dr. James Taylor on Medical Ophthalmology, and one by Dr. Bertram Abrahams on the Medical Application of Electricity.

We feel sure that this concise volume on Diseases of the Nervous System will commend itself to medical men in general who are anxious to furnish themselves with the



clinical features of the various nervous maladies, more particularly as in few branches of medical science has accurate knowledge made greater strides of recent years than in that of Neurology.

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1. *A System of Physiologic Therapeutics; a Practical Exposition of the Methods, other than Drug-giving, useful in the Treatment of the Sick.* Edited by SOLOMON SOLIS COHENS, A.M., M.D.; Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at the Jefferson Medical College; Physician to the Philadelphia and Rush Hospitals.—
2. *Electrotherapy.* By GEORGE C. JACOBY, M.D.; Consulting Neurologist to the German Hospital, New York. In two books. London: Rebman, Limited. 1901. 8vo. Pp. 242 and 323.

THE medical practitioner who seeks a guide to the use of electricity will find Dr. Cohens' two-volume work very valuable. A great deal of the first volume is taken up with electro-physics, which should be familiar to any man who has studied physics. It adds considerably to the price of the work, and is, we think, out of place in the book. A description of the apparatus required for the therapeutic and diagnostic use of electricity, which follows, is an excellent and useful bit of writing, and should be very helpful to the physician who purposes buying electrical apparatus. The most generally useful sections of the book are those dealing with general and special electro-therapeutics. Indeed, we might say that but for them the work could hardly be classed as a medical one. Throughout the editor shows his partiality for the amended spelling as recommended by the Philological Society, but one which, so far, the public eschew; it reads anything but smoothly, and we find ourselves suddenly pulled up by the strange appearance of the phonetically-spelled words. We have become wedded to the system in use, and we are not to be divorced from it, even though the corrected spellings are merely reversion to a former simple and common form. While all considerations—historical, literary, and

economical—are in favour of the mode, we are not above following the ordinary custom of writing the English tongue.

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*A Practical Treatise on Fractures and Dislocations.* By LEWIS A. STIMSON, B.A., M.D., LL.D. (Yale); Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson-street Hospitals; Consulting Surgeon to Bellevue, St. John's, and Christ Hospitals; Corresponding Member of the Société de Chirurgie of Paris. Third Edition, revised and enlarged, with 336 Illustrations and 32 Plates in monotyp. London: Henry Kimpton. 1901. Pp. 842.

BUT two years have passed since the second edition was issued, and in the number of this Journal for August, 1899, will be found our review of that edition, in which were embodied our opinions of the merits of the treatise. Very little has since been added to our knowledge of the subject, and we have nothing further to add to the opinions then expressed.

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*Surgical Applied Anatomy.* By SIR FREDERICK TREVES, K.C.V.O., C.B., F.R.C.S.; Serjeant-Surgeon to H. M. the King; Surgeon-in-Ordinary to H.R.H. the Duke of Cornwall and York; Consulting Surgeon to the London Hospital; Late Lecturer on Anatomy at the London Hospital. New Edition, revised by the Author, with the assistance of ARTHUR KEITH, M.D., F.R.C.S.; Lecturer on, and Senior Demonstrator of, Anatomy at the London Hospital. Illustrated with 80 Engravings. Twenty-fourth Thousand. Cassell & Co., Ltd. 1901. Pp. 571.

THE fact that the volume to hand is the twenty-fourth thousand emphasises more strongly than any words of ours the esteem in which this work is held. A careful comparison with the third edition shows us that the present edition has been subjected to a thorough revisal. Many of the sections have been re-written, and much new material added, yet the size of the book has not increased.

Eighty woodcuts appear in this edition as compared with sixty-one in the preceding one. The new illustrations are well chosen, extremely instructive, and lend additional value to the text. We heartily congratulate the distinguished author on the well-merited success of his work. No better book could be placed in the student's hands.

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*Lessons on Massage.* By MARGARET D. PALMER, Masseuse and Manager of the Massage Department of the London Hospital. London: Baillière, Tindall & Cox. 1901. 8vo. Pp. xiv. and 234.

THIS book is a purely practical one for nurses engaged in the practice of massage. It contains everything necessary for a nurse to know, and is free from dogmatism on disease. There are numerous useful illustrations of the human anatomy, and others showing the different processes of massage. It is a good book, but unhappily it is disfigured by a chapter on the history of massage, of which history the writer was imperfectly and inaccurately informed.

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*Elementary Ophthalmic Optics, including Ophthalmoscopy and Retinoscopy.* By J. HERBERT PARSONS, F.R.C.S.; Curator, Royal London (Moorfields) Ophthalmic Hospital. London: J. & A. Churchill. 1901. Quarto. Pp. 162.

THE book is intended (says the author in his preface) to supply the student of Ophthalmology with all the optics necessary for an intelligent knowledge of his subject. The proofs are, in some cases, a little confusing at first, but they never demand more than a very elementary acquaintance with mathematics, even where a trigonometrical nomenclature has been inevitable, the meaning of the signs is usually self-evident. Special care has been taken to emphasise all important propositions by italics, so that those who do not care to grapple with the proofs are provided with a readily accessible synopsis of the results.

A short bibliography of the best books upon the subject has been added, so that the advanced student may know where to look for further information.

The text, which is well printed, is illustrated by numerous diagrams, and the author possesses the power of expressing clearly what he wishes to say.

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*An Experimental and Clinical Research into Certain Problems relating to Surgical Operations.* An Essay awarded the Alvarenga Prize for 1901 by the College of Physicians of Philadelphia. By GEORGE W. GRILE, A.M., M.D., Ph.D.; Professor of Clinical Surgery, Medical Department, Western Reserve University; Surgeon to St. Alexis Hospital; Associate Surgeon to Lakeside Hospital, Cleveland. Philadelphia: J. B. Lippincott Company. 1901. Pp. 200.

THE essay may be divided into four heads, each of which is of great importance to the practical surgeon.

The first relates to experiments in connection with the division and mechanical irritation of the pneumo-gastric nerves in the neck. Nine experiments are detailed, and then a summary of this experimental evidence is clearly and concisely stated. Six clinical cases are then reported fully or in abstract in which the vagus nerve was either cut or irritated by the author while operating on the neck. The effects are carefully noted, and are well worthy of careful study.

The second relates to the effect of intravenous infusion of saline solution. In this connection sixty-one experiments are detailed, after which comes again the author's summary of the experimental evidence on the circulation, on the blood itself, on respiration, and on the various tissues and organs. The conclusions and physiological explanations are then succinctly given.

The third relates to the physiologic action of cocaïn and eucaïn when injected into tissues. No less than eighty-nine experiments are given, followed by a complete summary of the evidence obtained. Just at present this is perhaps the most interesting section of the essay, and one of the utmost importance to all surgeons, as so much has of late been written and spoken of anæsthesia induced by the use of cocaïn or eucaïn, and more especially by their introduction through lumbar puncture into the subarachnoid

space. The author shows that by introducing a few drops of a one or even a half per cent. solution of cocaïn or eucaïn into the principal nerves of the limb a physiological "block" is produced which may and has been taken advantage of to amputate a limb without producing either pain or shock. The knowledge that this can be done should do much to make surgeons substitute this procedure for the much more dangerous one of subarachnoid injection of cocaïn by means of lumbar puncture, at any rate so far as the surgery of the limbs is concerned. The last head is devoted to the effect of temporary closure of the carotid arteries, and is one which is also of immense surgical importance.

We congratulate the author, and only wish that the importance of the relation of Physiology to Surgery was more appreciated than has hitherto been the case.

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*Tumours, Innocent and Malignant: their Clinical Features and Appropriate Treatment.* By J. BLAND SUTTON, Surgeon to the Chelsea Hospital for Women; Assistant Surgeon to the Middlesex Hospital, London. New edition, with over 300 Engravings. London: Cassell & Co., Ltd. 1901. Pp. 566.

IN the number of this Journal for November, 1894, will be found an exhaustive review of the first edition. Suffice it then to say that the present edition of this valuable treatise contains many additions which make it well worthy of the high opinion entertained of its predecessor. The author has not yet attempted to discuss the causes of cancer or sarcoma because, as he truly says, "they are at present unknown." In this, as in the previous edition, we have the same good features—viz., a paragraph at the end of each chapter devoted to the treatment of the condition under consideration.

Like the previous edition, too, the profusion of illustrations is one of its most admirable features.

The paper, type, and binding are all that we have been accustomed to expect in the publications of Messrs. Cassell. We congratulate the author, and predict a similar success for this edition as we did for the previous one.

PART III.  
MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—LOMBE ATTHILL, M.D., F.R.C.P.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.  
Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

*Friday, December 20, 1901.*

THE PRESIDENT in the Chair.

*Cæsarean Section.*

DR. A. HORNE read notes of a case and exhibited the patient. He said: Of the many absorbing topics of medical literature, of the many changes in the art of surgical treatment made in the two last decades, and of the many glorious achievements attained in this period under aseptic and antiseptic methods, to the obstetrician the surgery of the uterus, when complicated with a living foetus at or near the full term of pregnancy, is the most interesting and important subject upon which he may be called for his opinion. In drawing attention to the subject of Cæsarean section it is not my desire that any special inference should be drawn from the case I report, but my desire is simply to put it on record among the Transactions of the Obstetrical Section of the Royal Academy of Medicine in Ireland.

I desire to thank Dr. Elizabeth Massey for the notes; also to her promptitude in bringing the case into hospital I chiefly attribute the success. Mrs. T., aged twenty-three. Second pregnancy. Was admitted into the National Maternity Hospital, at 11 30 a.m., on Sunday, July 21st, 1901. She was born in the North, and

was considered a weakly child in her first years. She was reared in a chair, as she had not the use of her legs, until she was five years old. First labour, October, 1898, took place in the Rotunda Hospital. Patient was in labour some ten hours, when, after a prolonged instrumental delivery, a dead foetus was extracted. Her last menstruation was on October 22nd, 1900. At 6 a.m. on Sunday, July 21st, the membranes ruptured. At 10 a.m. she was visited by Dr. Elizabeth Massey, and she diagnosed a highly contracted pelvis, and had the patient at once removed to hospital. I saw her at noon. *Examination.*—The patient was small, delicately built. Height, 4ft. 4 ins. Measurement from crest of ilium to sole of foot, 29 ins.

From symphysis pubis to umbilicus	..	6 $\frac{3}{4}$ inches.
From ensiform cartilage to umbilicus	..	9 inches.
From left ant. spine to umbilicus	..	9 inches.
From right ant. spine to umbilicus	..	9 inches.
From ant. sup. spine to other in front	..	12 $\frac{1}{2}$ inches.
Around pelvis at head ant. spine	..	32 $\frac{1}{2}$ inches.
From symphysis pubis 2 × 1 to middle of spine	..	13 inches.

*Internal.*—From promontory of sacrum to lower angle of symphysis pubis, 2 $\frac{3}{4}$  inches.

The cervix was dilated to about the size of a florin; the head of the child could be felt above the brim. On external palpation it was movable. Back of foetus to the left. The heart sounds were audible immediately below the level of umbilicus, and to the left about 140 beats to the minute. I at once telephoned to the Rotunda, and have to thank Dr. Lloyd for having supplied me with the particulars of her previous delivery, and, as the measurement of the pelvis corresponded with my own, I decided on performing Cæsarean section, the mother having previously expressed the desire that her child should be born alive.

*Operation.*—At 3 30 p.m. patient was placed under chloroform by Dr. Massey, when ether was substituted. I was assisted by my colleague, Dr. Barry. An abdominal incision was made, extending from three inches above the umbilicus to within two inches of the symphysis pubis. The uterus was delivered through the abdominal wound, which was temporarily united behind it. An incision was made through the uterine wall, commencing high up at the fundus, but avoiding the lower uterine segment. The placenta was in front and was rapidly cut through; bleeding

was at once profuse. The child was seized by the buttocks and extracted; the head followed without any difficulty. The infant, a female, at once cried out. The assistant's hand grasped the uterine edges until I applied an elastic ligature. The placenta was detached without difficulty. The uterus contracted well, hot sterilised towels being applied; the wounded surfaces were brought together by means of six deep sutures and four superficial silk sutures. The abdomen was closed likewise, using silk for the deep sutures and silkworm gut for the superficial. The operation lasted forty minutes, the patient leaving the table in good condition. Pulse 105.

The child, a healthy girl, weighed seven pounds. The progress of the case was most satisfactory. Pain was experienced for only some four hours after operation, which was relieved by  $\frac{1}{8}$  gr. of morphin hypodermically. Thirty hours after delivery she was given 5 grs. of calomel; during that night she vomited on four occasions what was described as dark, bilious-looking matter. The bowels were moved by an enema of soap and water, to which a teaspoonful of common salt was added. The further convalescence was uneventful. The mother was able to suckle her child. She sat up on the twenty-first day, and left the hospital on the thirtieth day after operation. The three important questions I had to decide on my first visit to this patient were:—First, should I allow the labour to proceed, with the object of giving nature a chance of so moulding the head that I might eventually deliver by means of forceps or a symphysiotomy; secondly, should I perform a Porro's operation; or finally, a Cæsarean operation. I chose the last for two reasons—first, the mother was most anxious a living child should be born, and she knew the result of the previous labour; secondly, there had been no examination previous to her admission to hospital. The important points to my mind in this case, and upon which I would like to have the opinion of this Section of the Academy, are in connection with the uterine incision, whether one should adopt what is known as the classical anterior incision, or longitudinal, or the transverse incision as recommended by Fritsch. Recent authorities, notably Schroeder, are much in favour of the latter. The advantages he claims are as follows:—When made on a woman in the Trendelenburg position this incision allows the water to escape over the thorax of the patient; the peritoneum is thus exposed to far less risk of infection. Moreover, it is the best way to avoid the placenta.



and finally, as the incision is parallel to the vessels of the fundus, it is not followed by more hæmorrhage than the longitudinal one; in fact, among ninety-four cases of the transverse incision, Schroeder has found only fourteen in which any considerable hæmorrhage at the time of the incision is recorded, and in most cases it is stated that the bleeding ceased when the uterus contracted. Again, by the incision of Fritsch a more rapid extraction of the foetus is accomplished. By it one almost invariably comes upon one end of the child, either the head or the breech, by the longitudinal incision upon the trunk. When the foetus has been removed it is perfectly easy to inspect the whole of the uterine cavity down to the lower segment. Objection has been made that the transverse incision is likely to be followed by adhesion to the intestine, but in a paper published in the *Centrablatt f. Gynäkologie*, 1899, by H. Ludwig, of Vienna, in two Cæsarean operations on the same woman the uterus was opened by a transverse incision through the fundus, and the child was extracted alive. The result of the first operation was blameless in so far that the adhesion to the uterine cicatrix was only evident through the old silk suture.

I shall not discuss the Cæsarean operation in its relations to other operations, such as symphysiotomy, craniotomy, and the Porro's operation, as the time at my disposal is too limited, even if I had the desire. We cannot, however, shut our eyes to the fact that the Cæsarean operation is gradually being restored to a position not unlike that of ovariectomy, so that we can speak with confidence, as a rule, to a favourable result. No longer shall we be confronted with the words or saying—"Spare the mother, no matter about the child." The dangers attending the Cæsarean operation ought not to be as great, certainly not greater, than an ovariectomy, but students must be more fully instructed in the recognition of degrees of pelvic obstruction, so that it will not be necessary for the obstetrician to learn through delay, or through failure with forceps version or craniotomy, that a Cæsarean is demanded. I shall not touch on eclampsia, placenta prævia, prolapsed cord, &c., as forming the most recent indications for Cæsarean section. In the performance of Cæsarean section our motto should be:—Operate early, delay is fatal.

DR. ALFRED SMITH said he had listened with great pleasure to Dr. Horne's case. It left nothing for criticism, but much for praise. He could say nothing more than that he congratulated Dr. Horne on the successful issue of his operation.

DR. GLENN agreed with Dr. Horne on the risk of sepsis with which vaginal examination is attended. He thinks the bold, good cut going right through the placenta, if it lies in the line of incision, is good surgery. The risk of soiling the peritoneum by the liquor amnii may be avoided by binding round the uterus; bringing out the womb through the abdominal incision adds to the shock. For a living child he recommends the Cæsarean section, but if the child is dead he prefers Porro's operation. Removal of the placenta is sometimes difficult, and it is advisable to swab out the cavity with hot water. Packing the uterus with gauze, and bringing a portion of the tissue through the dilated os uteri into the vagina is recommended.

THE PRESIDENT desired to add his quota of praise to Dr. Horne on the very successful result of the case. Nothing could be better than an afebrile case and an aseptic recovery. Pelvic deformities were not often met with in Ireland compared with other countries. During his seven years term as Master of the Rotunda he had had only four Cæsarean sections and four symphysiotomies, yet from a letter he received from Glasgow he learns that one of the surgeons of the Maternity in that city had nine Cæsarean sections in nine months. In all these cases the question arises—should the woman be made sterile at the time of the operation? He thinks not. Can you choose your time for operation? If so, by all means select daylight.

DR. HORNE, in reply, stated that he used silk sutures, he passed six of them deep through the uterine wall, but not through the lining membrane, and the superficial sutures were through the peritoneum covering the uterine incision. He neither packed nor swabbed the uterus, there having been no risk of infection. He looks on the making sterile of the patient as unjustifiable. After operation he thinks the less interference with the uterus the better. Foreign bodies introduced into it are very likely to set up after-pains.

#### *Ovarian Cystomata.*

DR. HASTINGS TWEEDY exhibited two ovarian cystomata. During the examination of the patient prior to operation he had no difficulty in detecting the presence of the smaller tumour, but he utterly failed to recognise the larger, though it extended to the umbilicus, and the patient was deeply anæsthetised. He advised an operation. When the patient was on the operating table and

deeply anæsthetised she was again examined, but with no more satisfaction than at first. On opening the abdomen a great gush of ascitic fluid came, and he found a large cyst extending to the umbilicus, and all round a "bread and butter" mass, which he looks on as indicative of cancer. Pulling down the peritoneum he found cancerous masses connected with the loops of the intestines. The patient made an afebrile and uneventful recovery. On the Saturday after the operation she talked of going home, but in the evening of the day she was in a state of collapse, with shallow breathing, and she was pale and sallow in appearance. She got an enema and was better in the morning; she was fed for a time by enemata and quickly rallied, going home from the hospital on December 19th, 1901. The tumours are cancerous, with a considerable amount of fibrous tissue.

DR. GLENN congratulated Dr. H. Tweedy on his honesty in declaring that he failed to diagnosticate the large tumour prior to operation, even under anæsthesia.

THE PRESIDENT would like to know what those present thought the tumours were if they were not cancerous. When ascites is present it makes the diagnosis of abdominal tumours much more difficult.

DR. TWEEDY considered that large cystic tumours are more difficult to diagnosticate than small tumours. He looks on the pedicle as the characteristic sign of ovarian tumours. The term "bread and butter" would be found in American literature.

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#### SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

*Friday, Jan. 10, 1902.*

THE PRESIDENT in the Chair.

#### *Exhibit.*

DR. McWEENEY exhibited some microscopic slides showing the pathological changes that occur in the calf after the introduction of vaccine lymph, showing the presence of Guarnieri bodies in the vaccinated epithelium.

*Present state of our knowledge as to the Ætiology of Vaccinia.*

THE PRESIDENT read a paper on this subject. It was illustrated with lantern slides.

PROF. MCWEENEY in the course of his remarks referred to the fact that having been entrusted by the Irish Local Government Board with the supervision of the production of calf-vaccine, he had naturally thought of undertaking a research, with the object of ascertaining the cause of vaccinia. Before doing so he had thought it well to carefully survey the ground that had already been covered by others, and lay the present state of the question before the Academy. That vaccinia was merely small-pox, modified by passage through the calf, cannot be open to doubt since the work of von Thiemé, Ceely, Voigt, and Fischer. The microbic ætiology of the two diseases must therefore be identical. Since the commencement of the bacteriological epoch repeated and unsuccessful endeavours had been made to establish a bacterial ætiology for these maladies. Among the most recent of these attempts might be cited those of Klein, Copeman, Kent, Nakanshi, and of Czaplewski and Vanselow. Mann had demonstrated that in sections of vaccine tissue appearances closely resembling micro-organisms, but really consisting of granular or rod-like precipitates of stain—mere artefacts—might be produced in the process of Gram's method. The bacillus of Nakanshi was at once recognisable by anyone familiar with the microbic flora of the calf's skin, as the *Xerosis bacillus*, which closely resembles that of diphtheria, but is harmless. The *Micrococcus quadrigeminus* of the last named observers has been recently admitted by themselves to be devoid of all ætiological relation to the vaccine process. The attempts to prove that variola and vaccinia are due to a parasitic protozoön were begun in 1886 by Van der Loeff, continued by L. Pfeiffer, of Weimar, and still further developed by Guarnieri, of Pisa, and by Pfeiffer's pupil, v. Wasielewsky. To Guarnieri belongs the credit of having selected as the field of observation the rabbit's cornea, a transparent, non-vascular structure, in which the histological events could be observed uncomplicated by the vascular and exudative phenomena of inflammation. Guarnieri saw in the epithelial cells of the inoculated cornea rounded bodies varying in size from that of a minute coccus to about one-third of that of an epithelial nucleus. They lay in the protoplasm, often close to, and even indenting, the nucleus. Amœboid movements were observable on the warm stage, and Ernst Pfeiffer saw the bodies lying *between* the epithelial cells an hour after vaccination, and *within* them a few hours later on. Several observers, such as Ferroni and Massari, Salmon, and others, have

endeavoured to explain these bodies as resulting from irritation of a non-specific kind. But Hückel, whilst not admitting their parasitic nature, has been led to infer that they are the result of some alteration of the cell produced by the parasite or its toxin. E. Pfeiffer has shown that lymph that has lost its activity through filtration or otherwise is incapable of producing "bodies" in the corneal epithelium. Wasielewski has propagated the vaccine virus on the rabbits' cornea for forty-three generations, and used the corneal epithelium scraped off the forty-third consecutive rabbit for vaccinating children, and produced a large percentage of typical vesicles. The only feature presented by such virulent epithelium, and not presented under any circumstances by normal or otherwise irritated epithelium, is the presence of the "bodies" described by Guarnieri. For this reason it was difficult to escape from the conclusion that the "bodies" were the carriers of the infection. The cycle of development which they went through was far from being clear. In some form or other they must exist in vaccine lymph. Perhaps this was what Cohn described as *Microsphæra vaccinae*. Perhaps some of the "cocci" found in fresh lymph were really stages of this mysterious protozoon. Beyond the seeming existence of a nucleus the most careful examination had failed to reveal much structure in the "bodies" as found in the infected epithelium, and as to their reproduction and developmental cycle we know little or nothing. Through the kindness of Dr. Gustave Mann, of the Physiological Laboratory, Oxford, who had carried out a thorough investigation of the histology of the vaccine process, he was enabled to show the several stages in the evolution of the vaccine vesicle, illustrated by lantern slides and actual preparations, and he also exhibited slides and sections of the inoculated rabbit cornea in which every cell was seen to harbour one or more "bodies." He (the speaker) had lately seen a statement that Guarnieri had been able quite recently to cultivate his organism within collodion sacs in the peritoneum of the rabbit, but was unaware whether the fact had received confirmation.

DR. A. H. MONTGOMERY held that we never had a vaccine pustule—the pustule was the result of want of cleanliness. Pure lymph gives vesicles only. He would like to hear from Dr. McWeeney if he had ever found these Guarnieri bodies in lymph supplied to the Cow-pock Institution? Could these bodies be cultivated and vaccination be produced from the cultures?

DR. McWEENEY declared he was at one with Dr. Montgomery in saying that pure lymph never produces a pustule. He had not as yet commenced a systematic search for the bodies.

*Disease of Two Upper Cervical Vertebrae and Upper Part of Left Humerus.*

DR. J. P. DOYLE reported the following case :—The patient, a boy, aged 9, was admitted to St. Joseph's Hospital, under Dr. Doyle's care, on September 6, 1901. He was suffering from a pain in the left shoulder-joint. The boy stated that he fell from a ladder on a large stone, a distance of 20 feet. He was found to have a temperature of 100°, and he complained of pain in the joint, and was noticed to carry his head to the left side. On the 28th of the same month the pain was acute, and his limbs were stiff. On October 8th Mr. Doyle excised the head of the humerus. The boy made a good recovery, and the wound healed by first intention. On October 23rd the temperature of the boy rose to 104°, but some days before death it fell to 97°. He looked on the case as one of osteomyelitis. On December 4th, at night, soon after a nurse had been with him, the boy died suddenly. At the autopsy Dr. Doyle found the anterior surface of the occipital bone and first and second cervical vertebrae with their intermediate anterior portion very much eroded. The odontoid process of the axis was considerably diseased, especially the left side, and it protruded through the atlas in a very oblique direction. By the giving way of the transverse ligament the process pressed on the upper portion of the spinal cord, and thus caused sudden death. The atlas is displaced slightly downwards to the left side, owing to the articular surfaces on that side being much eaten away. And in this position there can be seen the remains of the sinus in the soft tissues which burrowed down to the acromial end of the clavicle. The pancreas was found enlarged and hard ; all the viscera were anæmic but otherwise normal.

DR. McWEENEY thought that the case more resembled one of tuberculosis than of osteomyelitis, of which it would be a very rare example.

## SECTION OF SURGERY.

President—THOMAS MYLES, M.D., F.R.C.S.I.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

*Friday, Jan. 17, 1902.*

THE PRESIDENT in the Chair.

*Living Exhibits.*

MR. HENRY GRAY CROLY showed—(a) case of amputation at the hip-joint; (b) case of ligation of external iliac artery for ilio-femoral aneurysm; (c) patient showing the result of excision of head of humerus for unreduced intra-coracoid luxation.

MR. R. F. TOBIN showed—(a) patient, aged eighty, from whom the prostate was removed by enucleation (with specimen); (b) case of excision of knee.

MR. D. KENNEDY showed a remarkable case of deformity of legs due to rickets.

*The Surgical Treatment of Chronic Synovitis.*

MR. R. L. SWAN read a paper on this subject. In cases of primary tuberculous synovitis Mr. Swan recommends that the joint should be opened, the fluid evacuated, the synovial membrane irrigated, and then thoroughly sterilised with pure carbolic acid, again irrigated with sterilised water and closed. With proper aseptic precautions he looks on the operation as the best treatment for chronic hydrops articuli of the knee. Rightly carried out the operation places the synovial membrane in a condition to return to its normal functional activity, and the patient gets a useful limb. He illustrated his paper by the history of two successful cases. He had not found carbolic acid the dangerous bactericide that some say it is. He in no way wishes to be understood as advocating the operation for disease of the joint complicated with disease of the osseous tissues or cartilage. The operation is intended to place the synovial membrane of the joint in a condition favourable for its recovery.

THE PRESIDENT was accustomed when a student to look on a knee-joint as the most dangerous cavity in the body. Even now he thinks the old humoral pathology exerts a certain influence on our practice. He quite agreed with Mr. Swan that the proper treatment for such cases is opening the joint, and by so doing the pathological lesion will be made plain. In the majority of cases

It consists in pedunculated growths commencing from the alar ligaments. If on opening the joint, especially in children, he found the synovial membranes to be tuberculous, he recommends that they be dissected out, a procedure which he believes leads to recovery.

Mr. E. H. TAYLOR objected to section of the patella. It leaves two raw osseous surfaces apt to be infected by tubercle, if any there be. He prefers Kocher's method; the flap gives room enough to examine the joint. Free swabbing with strong carbolic acid devitalises the synovial membranes and the cartilage, and leaves them a prey to the tubercle bacilli in their vicinity. He looks on the method suggested as one not well calculated to give good results in hydrops articuli; the wound heals, but after a little time the limb becomes shorter and often flexed. There is not true ankylosis. He recommends that the hyaline cartilage be shaved off the bone and the raw osseous surfaces be joined, ensuring a sound limb.

Mr. H. G. CROLY said that, as he understood Mr. Swan, the paper dealt with chronic synovitis, such as they so commonly meet with after an acute attack. They were not dealing with the treatment of tuberculous or other forms of knee-joint disease by excision; but the question was the treatment of hydrops articuli. He had seen good results from aspiration in such cases, and he had seen rest give good results. Many cases, he believed, call for such treatment as Mr. Swan suggests; but he would not approve dissecting out the membranes and slicing off the hyaline cartilage.

Mr. TORIN's experience was not quite in accord with that of Mr. Croly. He tried the rest cure with hydrops articuli for months without getting any good results. He looks on the thick pulpy synovitis—Brodie's pulpy degeneration of the knee-joint—as tuberculous synovitis, though in specimens submitted to microscopic examination no bacilli were found. The result of opening the joint and dissecting out the membranes is sometimes very good, and at other times very bad. Long continued effusion has stretched the ligaments, and they are unequal to the strain of active life. Favourable cases give good results with movable joint, but the more uniformly good results are obtained by ankylosis following excision.

Mr. JOHNSTON said that his experience of synovitis was not fortunate. He admitted a man with hydrops articuli which im-



proved for a time under the rest treatment, but the swelling did not wholly disappear. He opened the joint, irrigated it, and closed it. The fluid removed, about ten ounces, was examined and found to be highly albuminous. Dr. O'Sullivan found that the synovial membrane contained bacilli in large numbers. His incisions, one on each side of and parallel to the patellar tendon, healed quickly and well; but they broke down in a week, and not long after the patient developed tuberculous meningitis, of which he died.

MR. HAUGHTON said that surgeons should no longer be in doubt as to the condition of the osseous tissue in tuberculous disease of the knee-joint, as the Röntgen rays give a clear representation of any rarefaction of the tissue that may be present.

MR. LENTAIGNE asked Mr. Swan to describe his method. He had been for years using strong carbolic acid (absolute phenol) in different cavities of the body—tuberculous joints, after erasion and after incision, and tuberculous sinus, &c.—without seeing any evil effects from its use. As a student he had frequently met cases of carbolic poisoning; now he never sees one, although much larger quantities of carbolic acid are employed. He ascribes this to the carbolic acid they now get being pure; the toxic action was probably due to some impurity. He swabs out cavities with a very small sponge, held in a sponge holder, and well wet with the liquefied carbolic acid, and he has had no reason to regret it in any case. Mr. Swan's operation might prevent the need for arthrectomy or excision.

MR. DOYLE would like to know how Mr. Swan applied the carbolic acid; applying it on a swab was a most dangerous method. In children he has had bad results from operative interference with the synovial membranes of the knee-joint. The results are good for a month or so, but in three or four years' time they are found to be greatly deformed. Kocher's method gives great facility for examining the joint. He found the locus of infection to be at the attachment of the crucial ligaments.

MR. SWAN said that he did not deal with excision or erasion in his paper. He had no concern with them. The object he had in view was to show the possibility of opening the joint, removing the fluid, and allowing the synovial membrane to return to its normal condition. Latterly he has not been in the habit of cutting through the patella, but he cannot see the difference, as far as infection is concerned, between a cut in hard and one in soft tissues.

Puncturing is perfectly safe if carried out aseptically. The sub-crureus bursa was not mentioned by him simply because it communicates with the synovial sac, and in all operations on the joint must be dealt with. This is not the case with the bursa under the patellar ligament, consequently he referred to it. He cannot agree with Mr. Tobin, that portions of cartilage and bone are readily removed during the subsequent attempts at passive motion. Mr. Johnston got very bad results, but he took no precaution to avoid them; no bactericide was used, and the subsequent attack of tuberculous meningitis was a result that he thinks might have been anticipated after a tuberculous joint was opened. Tuberculous dissemination, as Owen pointed out, was, under the circumstances, a not infrequent sequence. He cleans out the joint with an aseptic loofah, and applies the carbolic acid with a stick. He is not wedded to carbolic acid; any equally powerful bactericide would answer quite as well.

*A Successful Case of Pylorotomy.*

MR. T. E. GORDON read a paper on the case of a patient, aged 43, who was admitted to the Adelaide Hospital for an abdominal tumour, and on April 2nd, 1901, Mr. Gordon performed the first step in a Roux operation. The patient made a good recovery with little or no shock. Twenty-five days afterwards the second stage of the operation was completed by the removal of the pylorus and about half of the stomach. The intestinal and gastric wounds were sutured with silk, a gauze drain was left in the area of operation, and the wound closed. The operation occupied one hour and three-quarters. The growth was found to be a columnar-celled cancer. For some days the patient remained in a precarious condition; temperature 102°, pulse 160. At the end of a week the food was increased in amount, and the patient made a good and quick recovery. Mr. Gordon afterwards considered the legitimacy of the operation of pylorotomy, and concluded that in a favourable subject Roux's operation was called for.

THE PRESIDENT begged to heartily congratulate Mr. Gordon on the first successful pylorotomy performed in Dublin. The difficulty of diagnosing tumours of the stomach was very great. In one of his cases he cut down on the viscus with the intent of doing a pylorotomy, but found so much thickening of the gastric walls by what he and his friends thought was cancer that he returned the stomach unopened to the abdomen, and the woman is to-day, after some years, alive and well.

MR. SWAN congratulated the author of the paper on his great success.

MR. E. H. TAYLOR drew attention to the anatomical condition found in the duodenum close to the pylorus. Surgeons before beginning a pylorotomy would do well to examine the duodenum.

MR. JAMESON JOHNSTON spoke, and

MR. GORDON replied.

#### INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has forwarded for publication the following list of candidates for His Majesty's Indian Medical Service who were successful at the competitive examination held in London on February 10, 1902, and following days:—

	Marks		Marks
1 Macpherson, J.	3,210	16 Hallilay, H.	2,629
2 Ross, W. C.	3,086	17 Wilson, F. E.	2,610
3 Kunhardt, J. C. G.	3,051	18 Paymaster, B. B.	2,577
4 Franklin, G. D.	3,026	19 Crossle, H.	2,560
5 Gill, J. H.	3,011	20 Cook, L.	2,546
6 Lloyd, R. A.	2,878	21 Forrest, J.	2,490
7 Barnado, F. A. F.	2,870	22 Scott, L. B.	2,483
8 Gourlay, C. A.	2,853	23 Ferriss, J. H.	2,456
9 Walker, E. A.	2,750	24 Patton, W. S.	2,445
10 Sime, F. W.	2,746	25 Mackworth, N. W.	2,409
11 Hirsch, L. L.	2,713	26 Trafford, W. L.	2,393
12 Ross, H.	2,684	27 Rundall, L.	2,365
13 Batty, H. E. J.	2,666	28 Maunsell, E. C. C.	2,342
14 Davys, G. J.	2,656	29 Robertson, G. C. J.	2,277
15 Betts, A. J. V.	2,650	30 O'Keefe, D. S. A.	2,062

#### NOTIFICATION OF CHICKEN-POX.

IN a report dealing with the outbreak of small-pox in London, the Public Health Committee of the London County Council recommend that the Council should make an order, under Section 56 of the Public Health (London) Act, 1891, temporarily rendering chicken-pox a notifiable disease. The report states that seven of the Metropolitan Borough Councils—Hampstead, St. Pancras, Hackney, Holborn, Bethnal Green, Greenwich, and Paddington—have already taken steps to render notification of chicken-pox obligatory in their districts, and to this list we may now add the City of Westminster.—*The Hospital*, Jan. 25, 1902.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by **SIR J. W. MOORE, B.A., M.D., Univ. Dubl. ;**

**F.R.C.P.I. ; F.R. Met. Sec. ;**

**Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl. ;**

## VITAL STATISTICS.

*For four weeks ending Saturday, January 25, 1902.*

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending January 25, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 21·0 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, January 25, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Jan. 4	Jan. 11	Jan. 18	Jan. 25			Jan. 4	Jan. 11	Jan. 18	Jan. 25	
22 Town Districts	23·2	20·6	20·2	21·0	21·7	Lisburn	9·1	13·7	4·6	18·2	11·4
Armagh	5·9	20·7	13·8	27·6	17·3	Londonderry	21·8	19·6	15·4	32·6	22·2
Ballymena	4·8	19·2	9·6	0·0	8·4	Lurgan	0·0	13·8	17·7	17·7	12·2
Belfast	26·8	18·2	18·3	21·9	19·8	Newry	16·6	16·6	4·1	24·9	15·6
Clonmel	5·1	20·4	78·6	0·0	23·5	Newtownards	11·4	11·4	5·7	40·1	17·2
Cork	24·3	24·0	24·0	21·3	25·9	Portadown	15·6	36·3	5·2	31·1	22·0
Draghda	35·8	12·3	32·7	0·0	20·5	Queenstown	13·2	6·6	13·2	19·8	13·2
Dublin (Reg. Area)	29·4	25·0	23·4	20·9	21·7	Sligo	38·4	14·4	14·4	38·4	26·4
Dundalk	20·0	4·0	31·9			Trillick	47·8	10·6	21·3	15·9	23·9
Galway	31·1	15·5	23·3	42·8	28·2	Waterford	27·3	19·5	15·6	11·7	18·5
Kilkenny	34·8	0·0	0·0	0·0	8·7	Wexford	14·0	9·3	28·0	18·7	17·5
Limerick	34·2	24·6	11·0	19·2	22·2						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, January 25, were equal to an annual rate of 1·1 per 1,000—the rates varying from 0·0 in fourteen of the districts to 6·6 in Queenstown. Among the 151 deaths from all causes registered in Belfast are one from typhus fever, 3 from whooping-cough, one from diphtheria, and 2 from diarrhoea. The 31 deaths in Cork include one from scarlet fever, one from whooping-cough, and one from diarrhoea.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 293,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, January 25, amounted to 215—116 boys and 99 girls; and the deaths to 158—79 males and 79 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 21·7 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 20·9 per 1,000. During the four weeks ending with Saturday, January 25, the death-rate averaged 25·6, and was 6·9 under the mean rate for the corresponding portions of the ten years, 1892–1901, based on the estimated mean population of the Dublin Registration Area as then constituted.

Twelve deaths from zymotic diseases were registered during the week under discussion, being 2 above the number for the preceding week, and equal to an annual rate of 1·6 per 1,000 of the estimated population, the average rate for the corresponding week of the past ten years being 4·5 per 1,000. The 12 deaths include 4 from diarrhoeal diseases, 2 from enteric fever, and one each from measles, whooping-cough, diphtheria, septicæmia, and rubella.

Tubercular disease caused 29 deaths—19 from pulmonary

tuberculosis, 2 from tubercular meningitis, one from puerperal peritonitis, and 7 from other forms of the disease.

Diseases of the respiratory system caused 35 deaths. This number is 8 below the number registered in the preceding week, and is equal to a rate of 4·8 per 1,000 of the estimated population, the average for the corresponding period of the past 10 years being 7·6 per 1,000. Bronchitis caused 14 deaths, pneumonia caused 20 deaths, and croup caused one death.

Convulsions caused the deaths of 6 children under one year of age, of whom 3 were infants under one month old.

There were 2 deaths from apoplexy and one from epilepsy, besides 11 from other diseases of the brain and nervous system (exclusive of convulsions).

Cancer caused 8 deaths, and diseases of the circulatory system 12 deaths.

Five deaths from accidental violence were registered.

In 6 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the deaths of 4 infants under one year old and the death of one person aged 86 years.

Thirty-six of the persons whose deaths were registered during the week were under 5 years of age (22 being infants under one year, of whom 8 were under one month old) and 48 were aged 60 years and upwards, including 24 persons aged 70 and upwards, of whom 9 were octogenarians, and 2 (females) were stated to have been aged 93 and 94 years respectively.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending January 4, 1902	..	..	76 cases.
.. January 11, ..	..	..	51 cases.
.. January 18, ..	..	..	67 cases.
.. January 25, ..	..	..	58 cases.

Of the 58 cases notified in the week ended January 25, 10 were erysipelas, 10 enteric fever, 18 scarlatina, 6 diphtheria, 9 measles, one German measles, and 4 continued fever.

**(2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.**

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending January 4, 1902	..	..	9 cases.
„ January 11, „	..	..	3 cases.
„ January 18, „	..	..	2 cases.
„ January 25, „	..	..	6 cases.

Of the 6 cases notified in the last week, one was enteric fever, 2 were scarlet fever, and 3 continued fever.

**(3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.**

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending January 4, 1902	..	..	41 cases.
„ January 11, „	..	..	18 cases.
„ January 18, „	..	..	62 cases.
„ January 25, „	..	..	44 cases.

Of the 44 cases notified in the last week, 2 were diphtheria, 2 scarlet fever, 22 measles, 17 whooping-cough, and one "fever."

**(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.**

Eight cases of enteric fever were admitted to hospital during the week ended Saturday, January 25, 5 cases were discharged, and 50 cases remained under treatment at the close of the week.

Twenty-one cases of scarlatina were admitted to hospital, 7 cases were discharged, and 79 cases remained under treatment at the close of the week. This number is exclusive of 20 patients under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

One case of typhus was admitted to hospital, and two cases remained under treatment at the close of the week.

Five cases of diphtheria were admitted to hospital, 13 cases were discharged, there was one death, and 36 cases remained under treatment at the close of the week.

In addition to the above-named zymotic diseases recognised as such, one case of pneumonia was admitted to hospital, 10 patients

were discharged, there was one death, and 15 cases remained under treatment at the end of the week.

### STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending January 4, 1902	..	..	59 cases.
"    January 11, "	..	..	53 cases.
"    January 18, "	..	..	40 cases.
"    January 25, "	..	..	63 cases.

Of the 63 cases notified in the week ended January 25, 18 were enteric fever, 9 erysipelas, 5 diphtheria, 17 continued fever, 7 scarlet fever, and 6 membranous croup.

### ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, January 25, in 75 large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 17·7 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 20·3 per 1,000, the rate for Glasgow being 22·1, and for Edinburgh 18·8.

### METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of January, 1902.*

Mean Height of Barometer	-	-	30·117 inches.
Maximal Height of Barometer (31st, at 9 a.m.),	-	-	30·897 "
Minimal Height of Barometer (1st, at 9 p.m.),	-	-	28·958 "
Mean Dry-bulb Temperature	-	-	42·4°
Mean Wet-bulb Temperature	-	-	40·3°
Mean Dew-point Temperature,	-	-	37·7°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	·231 inch.
Mean Humidity,	-	-	84·4 per cent.
Highest Temperature in Shade (3rd),	-	-	55·6°
Lowest Temperature in Shade (30th),	-	-	26·9°
Lowest Temperature on Grass (Radiation) (30th),	-	-	22·7°
Mean amount of Cloud,	-	-	63·6 per cent.
Rainfall (on 12 days),	-	-	1·614 inches.
Greatest Daily Rainfall (on 10th),	-	-	·692 inch.
General Directions of Wind,	-	-	W., S.W.



*Remarks.*

A very mild, open month, with high atmospheric pressure, predominant W. and S.W. winds, and a moderate rainfall. More than one-third (.692 inch) of the whole precipitation for the month occurred on the 10th in connection with a complex depression which formed over Ireland, and in which the wind suddenly shifted from W.S.W. to N.E. A resplendent sunrise on the 9th preceded this disturbance. The first frost of the month in Dublin did not occur until the 14th, and was quite a passing chill. A persistent "cold snap" began on the 24th with showers of hail, sleet, and snow, and lasted to the close of the month.

The mild weather was connected with the passage eastward across Northern Europe of a series of very large and deep atmospheric depressions, whereas an area of high barometer (anticyclone) hung over France and the southern part of the British Isles. Between Sunday, the 26th, and Friday, the 31st, a remarkable change in atmospheric pressure took place in North-western Europe. On the former day the barometer was below 29 inches over nearly the whole of Norway, Sweden, and Denmark. On the morning of the latter day the barometer rose to 31 inches and upwards all over Scotland, and in the S.W. of Norway. At 8 a.m. of the 31st, Aberdeen reported 31.05 inches, and Skudesnæs 31.06 inches as the readings of the barometer, corrected and reduced. At 10 p.m. of the 31st the still higher value of 31.11 inches was recorded at Nairn.

The duration of bright sunshine was estimated at 54 hours, the daily average being 1.7 hours. The corresponding values for January, 1901, were 64 hours and 2.1 hours.

In Dublin the arithmetical mean temperature (43.0°) was above the average (41.4°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 42.4°. In the thirty-seven years ending with 1901, January was coldest in 1881 (M. T. = 33.2°), and warmest in 1898 (M. T. = 47.8°). In 1901 the M. T. was 41.9°.

The mean height of the barometer was 30.117 inches, or 0.243 inch above the corrected average value for January—namely, 29.874 inches. The mercury rose to 30.897 inches at 9 a.m. of the 31st, and fell to 28.958 inches at 9 p.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1.939 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 42.4°, or 1.5° above the value for January, 1901. Using the formula, *Mean*

*Temp.* = *Min.* + (*Max.* — *Min.* × .52), the M. T. becomes 43.2°, compared with a twenty-five years' average of 41.5°. The arithmetical mean of the maximal and minimal readings was 43.0°, compared with a twenty-five years' average of 41.4°. On the 3rd the thermometer in the screen rose to 55.6°—wind, W.S.W.; on the 30th the temperature fell to 26.9°—wind, calm. The minimum on the grass was 22.7° on the 30th.

The rainfall was 1.614 inches, distributed over 12 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2.200 inches, and the average number of rainy days was 17.3. The rainfall, therefore, and rainy days were considerably below the average. The record rainfall for January was in 1895—namely, 5.711 inches on 24 days. In 1876, only .406 inch was measured on but 9 days. In 1901, 2.672 inches fell on 17 days.

The atmosphere was foggy on the 10th, 14th, 17th, 18th, 26th, and 30th. High winds were noted on 13 days, reaching the force of a gale on 3 days—the 1st, 4th, and 31st. Snow or sleet fell on the 24th, 25th, 26th, and 29th; hail on the 24th only. Temperature exceeded 50° in the screen on 10 days; while it fell to 32° in the screen on 7 nights, compared with 3 nights in 1901, 2 in 1900, 4 in 1899, only 1 night in 1898, 13 nights in 1897, only 3 in 1896, 18 in 1895, 7 in 1894, 4 in 1893, and 15 in 1892. The minima on the grass were 32° or less on 12 nights, compared with 11 nights in 1901, 13 nights in 1900, 16 in 1899, only 3 in 1898, 21 in 1897, 8 in 1896, 29 in 1895, 17 in 1894, 16 in 1893, and 25 in 1892.

In Dublin the rainfall up to January 31st, 1902, amounted to 1.614 inches on 12 days, compared with 2.672 inches on 17 days in 1901, 2.579 inches on 27 days in 1900, 2.483 inches on 24 days in 1899, 1.786 inches on 14 days in 1898, 2.694 inches on 17 days in 1897, only .720 inch on 14 days in 1896, and with a twenty-five years' average (1865–1899) of 2.200 inches on 17.3 days.

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At Knockdolian, Greystones, Co. Wicklow, the rainfall was 1.860 inches on 9 days, compared with 4.035 inches on 16 days in 1901, 3.766 inches on 24 days in 1900, 4.395 inches on 24 days in 1899, 2.345 inches on 13 days in 1898, 3.660 inches on 20 days in 1897, and only .485 inch on 7 days in 1896. The heaviest falls in 24 hours were .650 inch on the 10th, and .460 inch on the 1st.

At Cloneevin, Killiney, Co. Dublin, the rainfall was 1.62 inches on 12 days, .64 inch being measured on the 10th. The average fall in January for the 17 years, 1885–1901, was 2.356 inches on

17.2 days. In 1895 the rainfall was 5.93 inches on 24 days, in 1896, .70 inch on 9 days, in 1897, 3.08 inches on 20 days, in 1898, 1.58 inches on 13 days, in 1899, 2.93 inches on 22 days, in 1900, 2.82 inches on 25 days, and in 1901, 2.83 inches on 15 days.

Dr. B. H. Steede writes that at the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell to the amount of 1.666 inches on 12 days, the maximal falls in 24 hours being .442 inch on the 10th, and .416 inch on the 1st. The shade thermometers rose to 54.0° on the 3rd, and fell to 28.5° on the 29th. In January, 1899, the rainfall at this Second Order Station was 4.760 inches on 23 days; in 1900, 3.810 inches on 28 days; in 1901, 3.541 inches on 14 days.

At the Railway Hotel, Recess, Connemara, County Galway, the rainfall in January amounted to 5.842 inches on 21 days, compared with 6.623 inches on 27 days in 1900, and 4.691 inches on 19 days in 1901. The maximal fall in 24 hours was .830 inch on the 1st. Snow and hail fell on the 28th.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, the rainfall was 2.28 inches on 14 days, .86 inch being measured on the 10th. Sleet, snow, and hailshowers occurred on the 24th. The mean shade temperature was 40.6°, the extreme readings being—highest, 54°, on the 3rd; lowest, 28°, on the 30th and 31st.

Dr. J. Byrne Power, F. R. Met. Soc., D.P.H., Medical Superintendent Officer of Health, reports that at Kingstown, Co. Dublin, the mean temperature for the month of January was 43.8°, the extremes being—highest, 56.5°; lowest, 28.0°. At Bournemouth the mean was 42.8°, the extremes being—highest, 53.0°; lowest, 28.0°. The mean daily range was 8.8° at Kingstown, and at Bournemouth 9.6°. The mean temperature of the sea at Sandycove bathing-place was 44.0°. The rainfall at Kingstown was 1.48 inches on 10 days, while at Bournemouth it was 0.95 inch on 11 days. The duration of bright sunshine was 61.5 hours at Kingstown, 42.5 hours at the Ordnance Survey Office, Phoenix Park, 39.4 hours at Valentia, and 50.5 hours at Eastbourne.

## PERISCOPE.

### INITIAL SYMPTOMS OF SMALL-POX.

IN a study of one hundred hospital cases of small-pox recently observed in Philadelphia, the following facts were noted by W. M. Welch and J. F. Schamberg (*Phil. Med. Jour.*, Dec. 21, 1901, and *Med. News*, Jan. 11, 1902):—Of the initial symptoms headache was most constant (86 per cent.), next chills or chilliness (78 per cent.), then backache (70 per cent.), vertigo (57 per cent.), nausea and vomiting (55 per cent.). In point of time, chills were first observed in 35 cases, headache in 26, backache in 16, vomiting in 9, vertigo in 2. Severity varied, but in the severe cases the initial symptom was always well-marked. The death-rate was 22 per cent. It was also observed that in unmodified cases there was no marked remission of the fever until the second, third, or even fourth day of the eruption. In many cases, moreover, the early symptoms were interpreted as manifestations of typhoid.

### THE SOCIETY OF MEDICAL PHONOGRAPHERS.

THIS Society will hold its next Annual Shorthand Examination early in May, 1902. Two prizes will be offered, each of the value of £5, one for first-year students and one for students of more than one year's standing. The competition will be open without entrance fee to any Registered Medical Student in the United Kingdom who has not taken a first prize at one of the Society's previous examinations. It will be held simultaneously in London, Edinburgh, Dublin, and at any provincial medical centre in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates should send in their names as early as possible to Dr. P. G. Griffith, Bonhams, Farnborough, Hants, who will furnish them in return with a detailed prospectus of the examination. The latest date for receiving entries will be April 15th, 1902.

### PRESERVING MUSEUM SPECIMENS.

DR. HUGH GALT uses (*Glasgow Medical Journal*, Jan., 1902) a fluid, the composition of which is as follows:—Common salt, 5 oz.; potassium nitrate, 1 oz.; chloral hydrate, 1 oz.; water, 100 oz. He says that this compares with the older methods in the following respects:—"1. Cost. This is about 4d. per gallon, as compared with 2s. 6d., or more, in the alcohol or formalin methods.

2. Simplicity. It is as simple as the alcohol method, and much simpler than any of the formalin methods. 3. Action of light. This is one of its great advantages over any of the formalin methods, as specimens thus preserved are not apparently affected as to their colours, even by strong sunlight. 4. The retention of the original colours of the specimen is better than in any of the older methods. 5. It is very portable. The solid ingredients may be carried any distance, and the liquid prepared as required. 6. As the solids are non-volatile, the specimen jars require replenishing with water only. 7. It is non-poisonous and non-irritating. 8. It does not affect the cellular elements of the tissues, unlike alcohol and formalin. 9. Shrinkage is slight, and what little there is, is due to the preparatory treatment. The preparatory treatment in this method is the same as in the old method of preservation in alcohol."

#### SUPRARENAL EXTRACT IN CARDIAC CONDITIONS.

DR. W. E. DEEKS recommends (*Montreal Medical Journal*, Nov., 1901) the use of suprarenal extract as the best remedy known for toning up the vascular system in old myocarditic conditions attended by a lowered blood-pressure, with the least possible disturbance to digestive and other functions.

### NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

#### *Soloid Nitro-propiol.*

MESSRS BURROUGHS, WELLCOME & COMPANY, Snow Hill Buildings, London, E.C., have submitted to us a specimen tube of "soloid" nitro-propiol, gr.  $\frac{1}{4}$  (0.016 gm.), which is a recent addition to their list of "soloid" products. Nitro-propiol is of special value for confirming the presence of glucose in urine, when indicated by other re-agents, such as Fehling's solution, inasmuch as the reaction is not influenced by uric acid, creatinin, glucuronic acid, bile colouring, or by bodies which may be contained in the urine after the administration of certain drugs. To apply the test mix 10 minims of the suspected urine with 3 drachms (10 c.c.) of water; then add one "soloid" nitro-propiol, and boil. If glucose be present the liquid will assume a blue colour, owing to the formation of indigo blue. This colour may appear quickly, but usually only after boiling for about three to five minutes. The "soloid" product renders the application of this test a simple matter, and it will no doubt be found useful by the medical profession. "Soloid" nitro-propiol, gr.  $\frac{1}{4}$ , is issued in tubes containing 20.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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APRIL 1, 1902.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

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ART. **IX.**—*Rare Fractures: Reversed Colles' Fracture; Impacted Intracapsular Fracture of Cervix Femoris.\**  
By **EDWARD HALLARAN BENNETT, M.D., Univ. Dubl.;**  
**F.R.C.S.I.;** Professor of Surgery in the University of  
**Dublin.** (Illustrated.)

**FRACTURE OF THE LOWER END OF THE RADIUS, WITH DIS-  
PLACEMENT OF THE LOWER FRAGMENT FORWARDS.**

I **PRESENT** a cast and a skiagraph of a limb deformed by  
this injury.

Last November a lady of middle age consulted me about her left wrist. The joint was much deformed with marked abduction of the hand and a dorsal tumour on the proximal side of the joint; on the palmar aspect there was also a tumour limited by a very oblique groove leading upwards and outwards from the head of the ulna. She told me that six months before her visit to me she was walking along a path which runs on the borders of some high cliffs on the coast of Kerry. In getting over a stile on the path her dress caught in some obstacle, and fearing that she would fall to the right toward the border of the cliff, she threw herself to the left on to the bank; she fell on the left shoulder, arm, and

\* Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, on Friday, February 21, 1902. [For the discussion on this Paper see page 299.]

the back of her hand. Her arm and hand swelled greatly, and were deeply stained with effused blood. No fracture of the wrist was recognised, the injury to it being mistaken for a bad strain. Long after the time for treatment of the recent injury had passed, and after the swelling caused by the blood effusion had cleared up, the deformity which the cast records raised the suspicion of fracture of the radius. It was easy to recognise that the carpus with the lower end of the radius had passed forward, and that the lower end of the upper fragment formed the dorsal tumour on the proximal side of the wrist-joint.

The question submitted to me was, Can the fracture be re-broken, and the deformity removed by re-setting the fragments? and will the use of the limb be fully restored by such treatment? I had the skiagraph taken to verify the details which I have mentioned. From a consideration of these details, and of the time which had consolidated the fracture, I concluded that any traction that I could make on the displaced fragment would fail to produce a re-fracture, and that the damage to the structures would only increase the loss of movements of the joint. I did not think it wise to suggest any cutting operation, considering the patient's age, and the amount of damage to the wrist that must attend such a proceeding. I advised passive and active motions of the joint with massage.

Already Roberts and Platt have published good skiagraphs of this fracture, taken at long intervals after the injuries. This is the first instance of it that I have met since the X-rays have come to our help in the diagnosis of its details, and I think it is the first that has been published, taken so soon after the occurrence of the injury.

#### IMPACTED INTRACAPSULAR FRACTURE OF THE NECK OF THE THIGH-BONE.

The case I desire to submit to the Academy is one of exceptional interest.

In the first place, examples of impacted intracapsular fractures of the neck of the thigh-bone are very rare, and attract special attention, because among them only are to be observed osseous unions of intracapsular fractures. The facts of the case are these:—

On November 19, 1901, a man, aged fifty-one, was carried into Sir Patrick Dun's Hospital, having sustained a severe fall which rendered him powerless either to stand or attempt to walk. He was very stout, and stated that his weight was about seventeen stone. He had been standing on a pile of timber some six feet in height making it fast with a rope; as he pulled on the rope it broke, and he fell to the ground, striking with his right hip and shoulder on to the curb of the pathway. He heard as he struck on his hip a loud crack issue from his bone as it broke. I have many times heard the record of a loud crack heard at the moment of fracture of bone as a detail of the injury, but never before have I heard of its being recorded of fracture of the neck of the thigh-bone. On examination of the injured limb, there was found considerable bruising over and around the great trochanter, and over the deltoid muscle of the right shoulder. The thigh was slightly everted, and the attempt to invert it caused great pain. No shortening of the limb could be detected, but exact measurement was difficult because of the great stoutness of the patient. There was no crepitus obtainable either by movements of the hip-joint or by grasping the trochanteric region. The length of the limb did not alter with traction, but the attempt was very painful. The patient could not raise the heel of the affected limb off the bed, nor can he at this date, nearly three months after the injury; he could with his hands slightly flex the knee without lifting the heel from the bed.

From these facts I concluded that there existed a fracture of the upper end of the thigh-bone, which by the method of exclusion I determined must be either an impacted intracapsular fracture or Cooper's fracture through the trochanter major.

By chance it happened that the X-rays battery was not available, being away to be re-charged. I had then to wait for its return to test my diagnosis. During this wait it was noticed that on the third day moderate effusion had developed in the knee-joint. Assigning Gosselin's value to this sign, I inclined to the diagnosis of fracture through the trochanter major rather than that of impacted intracapsular fracture. In this it will be seen I was wrong. It leads me to lay less stress on the diagnostic value of the sign given by the knee effusion.

On the return of the battery Dr. Watson kindly set to



work to photograph the joint. All know how hard it is to get a readable skiagraph of the hip. As yet I have seen only one picture of the ordinary intracapsular fracture which showed the characters of the injury. I believe the picture I now show is the first ever made by X-rays from the impacted intracapsular fracture, nor was it obtained without many trials and failures. I had hoped to show a second picture taken just now three months after the admission of the patient to hospital. His great bulk and fatness made it a very troublesome job, and we have learned only that the fragments remain *in situ*.

The condition now is, I have but little doubt, that of osseous union of the fracture. In both pictures we can see that the form of the fracture is the same as in the cases recorded by Professor R. W. Smith—the same as in the seven specimens that our Museum holds—the lower fragment impacted into the upper.

I note that in measuring the limb on December 11th a shortening of about one-quarter of an inch was appreciable.

The rarity of the form of fracture, the rarity of the knowledge of its presence furnished by the audible crack I have recorded, the rarity of its exact diagnosis in the living subject, the rarity of its skiagraph—all, I think, justify my detaining the Academy with this brief note.

**ART. X.—Remarks on Mortality in England and Wales from Pulmonary Phthisis, and other Diseases of the Respiratory System.** By JOHN TATHAM, M.A., M.D. Univ. Dubl.; Fellow of the Royal College of Physicians of London; of the General Register Office, Somerset House, London.

OF the half-million or so of deaths, from all causes, which occur annually in England and Wales, about one-fifth part are caused either by Pulmonary Phthisis or by some other affection of the respiratory system. No apology, therefore, is needed for regarding the mortality from these diseases as a matter of serious public importance.

During the years 1896-1900, 208,623 persons have died

in England and Wales from Phthisis, or Pulmonary Consumption. It is customary to state the mortality from any disease as so many deaths in each million *persons* living; but in the case of diseases like those under present consideration which affect males and females unequally, it is desirable that the mortality should be separately given for *each sex*.

Within the five years ending A.D. 1900, there have been registered 116,646 deaths of males, and 91,977 deaths of females, from Pulmonary Consumption. These deaths give an annual rate of mortality equal to 1,527 per million living for males, and to 1,129 per million living for females. It thus appears that, at the present time, males, in the aggregate, die of Phthisis much more rapidly than do females. This has not always been the case. In my evidence before the last Royal Commission on Tuberculosis, I showed that in the ten years, 1851-60, Phthisis had been more fatal, at all ages, to females than to males, by 20 per million living; and that females, between the ages of five years and forty, had died of Phthisis more rapidly than males at corresponding ages. In the five years ending with 1900, on the contrary, the mortality of males considerably exceeded that of females at all ages, except the period between the fifth year and the twentieth. It will thus be seen that the sex incidence of Phthisis has materially changed since the period 1861-70.

The following tables show (A.) the mortality from Phthisis, and (B.) the mortality from other diseases of the respiratory system among males and females separately in England and Wales in the years 1896-1900, and also, for comparison, the corresponding figures for the years 1861-70.

Although the mortality from Pulmonary Consumption is still terribly high, it is satisfactory to find, from the national records, that it has been considerably reduced within the last few years. The relatively slight reduction which has taken place in the mortality from other diseases of the respiratory system is far less satisfactory. (See Table B.)

Comparing, by the help of Table A., the more recent

quinquennial period with the ten years ended in 1870, we find that, among persons at all ages and of both sexes, the mortality from Phthisis has decreased very considerably; but that among females the decrease has been much more rapid than among males. Among the former, the aggregate Phthisis mortality in 1896-1900 was considerably less than half of what it had been in 1861-70; whilst among the latter the decrease amounted to 38 per cent. The

## (A.) MORTALITY FROM PHTHISIS, PER MILLION LIVING.

Age Groups	Males		Females		Reduction per cent. in 1896-1900	
	1861-70	1896 to 1900	1861-70	1896 to 1900	Males	Females
All ages ..	2467	1527	2483	1129	38·1	54·5
Under 5 years	990	390	947	325	60·6	65·7
5 to 10 ..	431	138	477	199	68·0	58·3
10 to 15 ..	605	192	1045	409	68·3	60·9
15 to 20 ..	2190	898	3112	1137	59·0	63·5
20 to 25 ..	3883	1849	3967	1522	52·4	61·6
25 to 35 ..	4094	2338	4378	1843	42·9	57·9
35 to 45 ..	4166	3135	3900	2084	24·7	46·6
45 to 55 ..	3861	3220	2850	1589	16·6	44·2
55 to 65 ..	3297	2681	2065	1231	18·7	40·4
65 to 75 ..	2024	1533	1239	794	24·3	35·9
Above 75 years	659	557	447	366	15·5	18·1

table further shows that it is in the earlier stages of life, more especially, that the reduction has taken place. For example, among males, the reduction at the several age groups from infancy to the twenty-fifth year has ranged between 52 and 68 per cent., and among females from infancy to the thirty-fifth year, it has ranged from 58 and 66 per cent. At ages beyond the thirty-fifth year, the reduction of mortality from this disease has been less marked, but it has been much greater among females than

among males, the difference being noticeable even up to the more advanced ages.

The mortality from Phthisis is very seriously affected by occupation. Unfortunately, statistics are not at present available with reference to the occupations in which *women* are engaged, but I have carefully investigated the Phthisis mortality of *men* engaged in the more common occupations during the years 1890-92, and the results will

(B.) MORTALITY FROM DISEASES OF THE RESPIRATORY SYSTEM, PER MILLION LIVING.

Age Groups	Males		Females		Difference per cent. in 1896-1900	
	1861-70	1896 to 1900	1861-70	1896 to 1900	Males	Females
All ages ..	3938	3418	3262	2788	- 13·2	- 14·5
Under 5 years	13554	12002	11478	9875	- 11·5	- 14·0
5 to 10 ..	811	495	779	472	- 39·0	- 39·4
10 to 15 ..	212	150	230	149	- 29·2	- 35·2
15 to 20 ..	313	304	306	202	- 2·9	- 34·0
20 to 25 ..	520	495	382	252	- 4·8	- 34·0
25 to 35 ..	859	786	611	450	- 8·5	- 26·4
35 to 45 ..	1720	1745	1129	985	+ 1·5	- 12·8
45 to 55 ..	3496	3407	2325	1968	- 2·5	- 15·4
55 to 65 ..	7581	7258	5871	5093	- 4·3	- 13·3
65 to 75 ..	15175	13635	13103	11824	- 10·1	- 9·8
Above 75 years	26148	27907	22950	27609	+ 6·7	+ 20·3

be found in Volume II. of my Supplement to the Registrar-General's Fifty-fifth Annual Report. The Phthisis mortality of men aged from twenty-five to sixty-five years, without distinction of occupation, may be expressed by the comparative mortality figure, 192. At one end of the scale come the lowest rates, those of coal miners and brick-makers, which range from 69 to 84, whilst at the opposite end of the scale come costermongers, with a figure of 443, inn-servants, with a figure of 476, and tin miners, with a figure of 508.

Phthisis mortality is also very considerably affected by locality. Taking, for example, the Phthisis mortality in the several counties of England and Wales, as published in the reports of the Registrar-General, in comparison with the average rate in the provinces (*i.e.*, England and Wales less London), Phthisis showed in 1891-97 excessive mortality among both males and females in London and in the Counties of Hampshire, Devonshire, Lancashire, the West Riding of Yorkshire and Northumberland; and also in North and South Wales. In addition to these there was excess in the Phthisis rate among males only in Sussex, Cornwall and Warwickshire; and among females only in Suffolk, Lincolnshire, Cheshire, Durham and Cumberland. Of the above-mentioned counties showing Phthisis mortality in excess of the average amongst both sexes in 1891-97, London and Lancashire had also experienced mortality from Phthisis in excess of the average, in each of the decennial periods ending with the years 1880 and 1890.

ART. XI.—*Clinical Report of the Rotunda Lying-in Hospital, for Year ending November 1, 1901.*\* By R. D. PUREFOY, M.D. T.C.D. F.R.C.S.I. (Master); and PAUL CARTON (Assistant).

DURING this year 1,905 women were admitted to the Maternity Department, of whom 1,610 were confined, and nearly 300 were discharged not in labour. Amongst those treated will be found examples of some of the rarest concomitants of pregnancy and childbed, such as emphysema, puerperal aphasia, and pulmonary embolism. During the year three deaths occurred. No. 1.—Patient moribund on admission; in acute phthisis. No. 2.—An emaciated, cachectic patient, some days in labour before admission, who succumbed after Cæsarean section, rendered necessary by uterine fibroids. No. 3.—An elderly patient with contracted pelvis, in whom the induction of premature labour was unusually protracted and difficult owing to uterine inertia and morbid adhesion of placenta.

\* Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, March 14, 1902.

TABLE NO. I.—*Admissions to Maternity Department.*

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total deliveries -	120	136	121	129	138	130	130	123	136	126	133	125	1,547
Total abortions -	3	2	7	4	4	6	7	2	3	9	8	8	68
Total cases treated	123	138	128	133	142	136	137	125	139	135	141	133	1,610
Patients discharged not in labour -	20	24	20	22	23	21	26	22	37	26	26	28	295
Total admissions													1,905

TABLE NO. II.—*Dispensary for Out-Patients.*

Number of first attendances,	-	-	-	4,110
„ repeated „	-	-	-	6,631
Total,	-	-	-	10,741

TABLE NO. III.—*Showing Nature and Number of Cases Treated in the Extern Maternity, 1900-1901.*

Total number of cases -	2,175	Operations—	
Abortions -	286	Curetting for abortion	200
Fœtal abnormalities—		Forceps	38
Anencephalus -	1	Manual removal of	
Hydrocephalus -	2	placenta	15
Hydatid mole -	1	Version	3
		Craniotomy	1
Hæmorrhage—		Presentations—	
Accidental -	18	Breech	36
Placenta prævia -	6	Brow	1
Post-partum -	27	Face	8
„ secondary	—	Footling	20
Hydramnios -	2	Head and arm	1
Hæmatoma vaginæ -	1	Hand and foot	—
Inversion -	—	Occipito-posterior	32
Mortality, infantile—		Shoulder	1
Macerated -	11	Transverse	4
Non-viable, premature	36	Elbow	1
Recent -	45	Prolapse of funis	7
Mortality, maternal -	4	Rupture of uterus	2
Multiple pregnancy, twins	22	Contracted pelvis	3
Female	-	Spina bifida	1
Male	-	Arrested breech	3
Mixed	-	High forceps	1

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*Table showing Number and Treatment of Cases of Accidental  
Hæmorrhage in Extern Maternity.*

Name	Variety	Date	Age	Preg.	Treatment	Child	Mother
1. S. S.	External	Nov. 4	36	xv.	Plug	D.	A.
2. M. O.	"	Feb. 14	37	xiv.	"	D.	A.
3. C. S.	"	Apr. 26	24	ii.	Plug at first, then rupture of membranes and forceps	D.	A.
4. — M.	"	May 14	26	iii.	None. Child born before arrival	D.	A.
5. M. F.	"	" 19	40	ix.	Plug	D.	A.
6. M. M.	"	June 4	38	ix.	"	D. B.	D. (collapse)
7. M. T.	Internal	" 12	?	vii.	Membranes ruptured	D.	D. (septic)
8. A. B.	External	" 30	24	ii.	Plug	A.	A.
9. B. B.	"	July 2	40	xii.	Membranes ruptured	A.	A.
10. L.M.L.	"	" 15	25	iv.	Plug	D.	A.
11. M. R.	"	" 20	?	?	"	D.	A.
12. M. L.	"	" 31	30	iv.	"	D. B.	A.
13. M. C.	Internal	Aug. 31	?	iv.	Plug first and forceps after	D.	A.
14. — C.	"	Sept. 8	36	iii.	Plug	D.	A.
15. — F.	External	Oct. 23	40	xiii.	"	D. 8	A.

In case 3 when the tampon was removed the os (which at the time of its application was closed) was found fully dilated, and good pains had set in.

In case 7, on examination the os was half dilated, membrane bulging, and good pains present.

In case 9, patient was in good labour and os fully dilated.

EXTERN MATERNITY—INTERESTING CASES.

*Prolapse of Cord; footling.*—M. Q., aged twenty-six; in labour 26 hours; 2-para. Difficulty with arms and head, but child was delivered alive.

*Arrested Breech.*—F. M., aged thirty four, 8-para; 56 hours in

labour. Traction proving unavailing, a leg was brought down and labour completed ; child stillborn.

*Twins and Hydramnios*.—F. G., aged thirty eight, 5-para. More than seven quarts of liquor amnii were drawn off. Patient came into labour next day ; both children born alive.

*High Forceps*.—Contracted pelvis ; c.v.  $3\frac{1}{4}$  inches. M. H., aged thirty-eight, 4-para ; 60 hours in labour. Os fully dilated 12 hours ; head still above brim. Forceps applied, and head drawn past promontory with much difficulty ; mother and child both well.

*Placenta Prævia Lateralis*.—Transverse presentation. A. M., aged thirty, 6-para. Os well dilated. Hand, foot, and cord in vagina simultaneously. Placenta felt on left side. Chloroform ; internal version ; child born alive.

*Rupture of Uterus and Vagina*.—M. M., aged thirty-six, 9-para, was seized in the seventh month with pain attended by bleeding ; os undilated ; pulse quick ; vagina tamponed. In a few hours pains came on, and in an hour afterwards sudden collapse took place. The tampon was removed, and in a few minutes, foetus, placenta and large clots were expelled. A large rent was found in left fornix extending into broad ligament. Iodoform gauze was passed into rent, and transfusion was begun, but the patient rapidly expired.

*Arrested Breech*.—E. M., 1-para ; 52 hours in labour. Delivery effected with great difficulty by traction in groin. Some difficulty in the after-coming head. Child alive.

*Hydatidiform Mole*.—S. D., 4-para. Strong pains with expulsion of fragments some hours before visit. Uterus reaching half way to umbilicus. Removal effected by finger and curette ; excellent convalescence.

*Brow Presentation*.—M. J., 6-para ; 10 hours in labour ; escape of meconium ; large scalp tumour. Forceps delivery ; female. alive.

*Hydrocephalus and Spina Bifida*.—Footling presentation. E. D., aged twenty six, 3-para. Breech born before arrival ; much difficulty with head.

*Placenta Prævia Lateralis*.—E. B., 3-para. On arrival, os found one-third dilated ; head and placenta felt. Bipolar podalic version, followed in due time by good pains and the birth of a stillborn child ; good recovery.

*Footling Presentation and Premature Labour complicated with*



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*advanced Phthisis.*—C. H., aged thirty-six, 10-para. On arrival knee was found at vulva; delivery easily effected; no bleeding; patient died same evening.

*Hydrocephalus; Perforation.*—E. D., aged thirty-eight, 6-para; 72 hours ill. Membranes ruptured some days before; os half dilated. Perforation performed; labour completed unaided soon after; foetus stinking. Patient made a good recovery.

*Placenta Prævia Marginalis.*—M. L., 5-para; os three-fifths dilated; placenta easily reached. Bipolar podalic version; good labour pains ensued and completed labour. Patient at seventh month. Foetus dead.

INDUCTION OF ABORTION.

This proceeding was found necessary in three cases:—

CASE I.—Patient a 1-para, aged twenty-eight; four and a half months pregnant; considerable hæmorrhage before admission. Five laminaria tents were inserted in cervix, and vagina plugged with cotton wool. This was removed in twelve hours, when foetus and placenta were found lying in vagina, and the uterus was curetted.

CASE II.—Patient aged thirty-eight, 7-para; six months pregnant; in hospital some days without hæmorrhage; discharged and re-admitted in three weeks' time owing to return of bleeding, preceded for some days by watery discharge. Five laminaria tents were inserted and vagina plugged. Twenty-four hours later tampon and tents were removed, when the os was found large enough to admit two fingers. The head was pushed up and a foot brought down. The placental insertion was within reach. Thirty hours later the foetus was expelled, and the placenta, which was partially adherent, was removed with the curette.

CASE III.—Patient aged thirty-two, 6-para; four and a half months pregnant; intermittent hæmorrhages, increasing in severity, had lasted for some weeks. Nine tangle tents were inserted, and vaginal tampon applied. Next day the uterus was emptied with the aid of Schultze's spoon forceps and plugged with iodoform gauze. Patient discharged on 8th day.

TABLE NO. IV.—*Showing Number and Nature of Cases Treated in the Intern Maternity.*

Total number of cases	- 1,616	Imperforate Anus -	- 1
Primiparae -	- 549	(cured by operation)	
Abortions -	- 64	Multiple pregnancy—	
Phlebitis -	- 1	Twins—	
Deformed pelvis -	- 15	Female -	- 4
Eclampsia (6 threatened) -	- 2	Male -	- 2
Epilepsy -	- 8	Mixed -	- 8
Erythema -	- 7		- 14
Edema of Cervix -	- 1	Syphilis -	- 4
"    " Vulva -	- 7	Myoma uteri -	- 8
Ascites -	- 1	Aphasia -	- 2
Hæmorrhage—		Operations—	
Accidental -	- 19	Forceps -	- 66
Placenta prævia -	- 9	Induced abortion -	- 8
Post-partum -	- 86	Induced labour -	- 5
"    secondary -	- 1	Manual removal of	
Hæmatoma vulvæ -	- 1	placenta -	- 34
Hydramnios -	- 14	Version -	- 10
Hyperemesis -	- 1	Cæsarean section -	- 1
Insanity -	- 1	Diseased infantile conditions—	
Morbidity -	- 82	Anencephalus -	- 1
Moles, hydatid -	-	Cephalhæmatoma -	- 8
Mortality, infantile—		Hydrocephalus -	- 4
Macerated -	- 40	Icterus -	- 277
Putrid -	- 5	Mastitis -	-
Premature -	- 8	Ophthalmia -	- 4
Non-viable -	-	Spina bifida -	- 8
Recent -	- 32	Hare-lip and cleft palate -	- 2
Died in hospital -	- 20	Monster -	- 1
Mortality, maternal -	- 8	Physometra -	- 1
Mummified Fœtus -	- 1	Presentations—	
		Breech -	- 43
		Brow -	- 1
		Face -	- 5
		Footling -	- 8
		Occipito-posterior -	- 20
		Transverse -	- 6
		Prolapse of funis -	- 10
		Puerperal ulcer -	- 2
		Rupture of uterus -	-

TABLE NO. V.—Cases of Contracted Pelvis.

Date	Name	Age	Para	Pelvic Measurements				Mode of Delivery	Result to Child	REMARKS
				C. V.	Trans.	Ext. C.	I. C.	I. S.		
Jan. 8	L. M.	23	I.	9.7	—	18	26.25	22	Unaided	7½ A.
Feb. 26	A. S.	32	VII.*	9.5	9.5	—	—	—	"	"
Apr.	S. M.	36	IV.*	9	10.25	18	27	22.75	Podalic Version	5½ D.
"	E. B.	32	III.	9	21.75	19.5	27	23½	Forceps	5½ A.
"	M. M.	34	I.	—	—	—	—	—	"	8 A.
May 14	M. P.	30	V.*	8.5	9.25	—	—	—	Podalic Version	9½ A.
June	M. G.	40	IV.	86.5	13	17	27	24	"	7½ D.
"	E. B.	25	I.	8.2	10.25	17	29	24	High Version	8½ A.
"	J. D.	19	I.	8.4	12.25	19	29	25.5	Forceps	8½ D.
Jul. 11	R. M.	38	VI.	10	10	—	—	—	Unaided	9 D.
"	A. M.	30	III.	7.5	12.50	19	29.5	25	Breech pres. Foot brought down	8½ A.
Aug.	E. C.	38	X.*	—	—	—	—	—	Unaided	5½ A.
Sept. 6	M. B.	36	V.	10	9.5	—	—	—	Unaided	5½ D.
Nov. 8	M. D.	30	IV.*	9.75	11.5	—	—	5.75	"	5 A.
Dec.	M. H.	42	XI.	9.35	12.3	—	28	25.5	High Forceps	8½ A.

\* See Report, 1900.

As will be seen from the Table, fifteen cases of contracted pelvis came under treatment. Five of these had undergone similar treatment in this hospital before, and on this occasion all but one were delivered of living children. In five premature labour was induced (see Table). Six of the fifteen were delivered by natural efforts. Delivery was effected with the forceps in five cases, and in two of these the high operation was found necessary. Podalic bipolar version was performed in two cases, and in one, which presented by the breech, a foot was drawn down.

#### ACCIDENTAL HÆMORRHAGE.

Of the nineteen cases recorded in our Table it will be seen that nine did not call for active interference, beyond supporting the fundus with hand or binder, and occasionally the administration of quinine. In four rupture of membranes was resorted to with excellent results. In seven cases the vaginal tampon was used with the admirable results which, as our former Reports amply demonstrate, follow its use.

In Case 1 os was dilated to the size of a florin, and membranes bulging under the influence of good pains.

Case 3.—Patient in strong labour. Os as in Case 1.

Case 6.—In consequence of oozing six hours after application of tampon, it was removed and the membranes ruptured, as os was fully dilated. Shortly afterwards the uterine contents were expelled naturally.

Case 13.—Patient's condition good at time of admission, and as pains were active and os fairly dilated, the membranes were ruptured.

TABLE NO. VI.—*Accidental Hæmorrhage.*

Name	Date	Age and Para	Variety	Treatment	Result to Child	Remarks
1. M. C.	Dec. 16	22, II.	External	Rupture of membranes	D.	Labour at 7th month; child 3½lbs.
2. C. W.	„ 24	19, I.	„	Tampon	D.	Labour at 8th month; child macerated; U. spongy on palpation at left side
3. J. K.	„ 30	39, IX.	Concealed	Rupture of membranes; forceps	A, D.	Twins; no external bleeding; clot 2lbs. followed birth of first child; forceps used with both children
4. L. K.	Nov. 17	23, I.	External	Tampon; hot douche	D.	Premature; 7th month; child 3½lbs.
5. R. K.	„ 30	28, I.	„	Unaided	A.	Labour at 7th month; child 8lbs.
6. C. H.	Mar. 11	36, X.	Mixed	Tampon and rupture of membranes	D.	Admitted in collapse; severe epigastric pain; large quantity of clots expelled with child
7. A. R.	Feb. 13	20, II.	External	Unaided	D.	Fainted before admission; no foetal heart audible; good labour pains; large retroplacental clot
8. M. R.	Apr. 5	32, XI.	Mixed	Tampon and forceps	D.	Pain and syncope before admission; 7th month; U. tense, reaching to ensiform; no foetal outline or heart
9. J. R.	„ 16	21, I.	External	Unaided	D.	Eclampsia; 7th month; urine highly albuminous
10. M. B.	Jun. 26	36, VIII.	Concealed	Tampon	D.	Pain and syncope; uterus very tense and painful; good pains followed tamponing; fluid and clotted blood in very large quantities followed birth of child; labour at term

TABLE NO. VI.—*continued.*

Name	Date	Age and Para	Variety	Treatment	Result to child	Remarks
11. E. C.	July 27	19, I.	Concealed	Unaided	D.	Premature
12. M. O.	Aug. 11	39, IX.	Mixed	Forceps ; tampon	D.	Occipito-post. at full term ; large clot expelled with placenta
13. S. L.	" 25	27, V.	External	Ruptured membranes	D.	Child 5lbs.
14. L. K.	July 29	24, II.	Concealed	Unaided	A.	Premature ; child 4½lbs.
15. C. D.	Oct. 24	23, IV.	External	"	D.	Macerated hydrocephalic fetus
16. K. M.	" 30	23, I.	Concealed	"	A.	Placenta showed large area of detachment
17. M. J.	Sept. 4	24, II.	External	"	A.	Child 8lbs.
18. M. M.	" 17	31, III.	"	Tampon	A.	Quinine 5 grs. administered
19. E. T.	" 8	40, X.	"	Unaided	D.	Premature ; quinine 5 grs. administered

TABLE NO. VII.—*Placenta Prævia.*

Name	Date	Age and Para	Variety	Presentation	Period	Result to Child	Remarks
1. K. R.	Dec. 1	36, VI.	Lateral	Vertex	Term	A.	Born 15 minutes after admission
2. M. J. B.	" 1	35, X.	"	Breech	6 months	macerated	Rupture of membranes
3. J. P.	" 16	24, III.	"	Twins	4½ "	—	"
4. K. M.	" 21	19, I.	Complete	Vertex	8 "	D.	Podalic version
5. M. B.	Jan. 14	27, VI.	"	—	6 "	D.	—
6. M. H.	Apl. 30	36, IX.	"	Twins	Term	A.	—
7. R. D.	July 17	42, III.	Marginal	—	"	A.	Bipolar podalic version
8. F. O'C.	Aug. 24	23, V.	"	Footling	7½ months	macerated	Hydramnios ; membranes ruptured
9. A. M. E.	" 30	38, VIII.	"	Vertex	6 "	D.	Induced abortion ; version. See Case 2 under this heading

Taking the cases in this table with those enumerated in the Report of last year we have a total of 25 consecutive cases of placenta prævia without any maternal fatality. Though the number of cases of placenta prævia admitted to hospital during the year was much smaller than in the preceding, it is gratifying to be able to record the satisfactory convalescence of all the mothers, and the birth of a living child in the three cases which went to term. Bipolar podalic version was resorted to in two cases. In three cases rupture of membranes was practised. In the case of J. P. (twin pregnancy) one placenta was prævia, and expelled from uterus and vagina before the birth of either fœtus. In the case of M. H. (twin pregnancy) both fœtuses presented by the vertex, one placenta being prævia. F. O'C., aged twenty-three, was admitted in her fifth pregnancy in very bad health, with temperature of 101.6° F., and pulse 115. She gave a history of hæmorrhage, and on examination the os was found half dilated, membranes and portion of placenta protruding. Rupture of the former gave exit to several pints of greenish, stinking fluid, followed shortly afterwards by a macerated fœtus.

#### POST-PARTUM HÆMORRHAGE.

There were seven cases of rather severe hæmorrhage, four of which were associated with adherent placenta. One occurred in a case where rupture of membranes had taken place four days previously, followed by a tedious labour. In twenty-nine cases the bleeding was inconsiderable, despite the fact that in eleven of these manual removal of the placenta was found necessary, and in seven cases forceps had been applied. In two of them the birth of twins was followed by *post-partum* hæmorrhage, and in a similar number hydramnios was present, associated with adherent placenta. In one the hæmorrhage occurred two hours, and in another one hour, after delivery. There was only one case of secondary hæmorrhage—viz., in the case of K. W., where bleeding took place on the seventh evening. On examination the uterus was found retroflexed, and the cavity occupied with a considerable quantity of clots. In no case of *post-partum* hæmorrhage was plugging of the uterus found necessary.

#### HYPEREMESIS.

This distressing accompaniment of pregnancy was observed in three instances:—

Case I.—K. N. was a 1-para, aged twenty-eight, admitted June 25, who had been treated in the dispensary during several months previously for extensive perimetritis and retroflexion. For several days before labour began vomiting was almost persistent, and but for the fortunate advent of pains active interference would have become necessary.

Case II.—B. D., aged thirty-four, 10-para, admitted May 16. Of the ten pregnancies six ended at term and four at the 2nd month. With the latter no sickness occurred. In the first and fifth pregnancies vomiting was persistent throughout; during the sixth and eighth it was absent. In the tenth vomiting began at the eighth month, slight at first, occurring in the morning only, but later increasing in severity, and persisting through the day. It is noteworthy that it was always absent at night. Vomited matter was watery, but never mixed with blood. Constipation generally present. Vomiting ceased immediately after delivery. Apart from pregnancy, the menstrual history was normal, and general health excellent.

Case III.—A. G., aged thirty-four, 1-para, admitted June 22. Had persistent vomiting throughout pregnancy. Aspect and complexion bad; marked emaciation and general pigmentation were observable. Marked abatement of the sickness occurred when the head engaged in the pelvis; but owing to its recurrence during labour it was deemed wise to give assistance with the forceps after a short second stage.

#### HYDRAMNIOS.

There were fourteen cases of hydramnios, amongst which there were three cases of twins, thirteen children born alive, two complicated with adherent placenta, and one with placenta succenturiata. One of the living children, which was affected with spina bifida, lived only two days. Four children were stillborn. One of these was anencephalic, exhibiting also congenital luxation of both knee-joints and double talipes varus. Another, which died at birth, presented on *post-mortem* examination double diaphragmatic hernia and extraordinary transposition



of viscera. The stomach, cæcum, small intestine, and one lobe of liver lay in left thorax. Imbedded in the right lung, with the heart in close proximity, was found a second lobe of liver. The cœlom was filled by a third lobe of liver. Of the fifteen children whose sex was ascertainable nine were females, thus confirming one of Dr. M'Clintock's observations in his most interesting monograph on this affection. Of the mothers four were primiparæ.

(To be continued.)

#### A NEW METHOD OF EXTRACTING TEETH WITHOUT PAIN BY ELECTRICITY.

DR. L. R. REGNIER, chief of the electrotherapeutic laboratory of the hospital "La Charité," and DR. HENRY DIDSBURY, dentist of the Paris hospitals, have communicated to the "Académie de Médecine de Paris," the results of their observations undertaken in the "Hôpital Pereire de Levallois," on the possibility of rendering teeth anæsthetic by electricity so as to extract without pain. To that effect they employed high frequency currents, developed by the d'Arsonval-Gaiffe apparatus. Teeth, with only one fang and no inflammation of the periosteum, are extracted without the least pain. Teeth with several fangs, but no inflammation of the periosteum, are generally taken out without pain; if sometimes the insensibility is not perfect, the pain is always considerably mitigated. This new method, which dispenses with the use of poisons, is not at all painful for the patient, is without danger for his health, and requires no previous preparation. Drs. Regnier and Didsbury have by the same method obtained insensibility of the bone of teeth, and also of the nerves. They intend to apply their discovery to all dental operations where pain is to be avoided. Thus they introduce to special and general surgery a new method of producing insensibility.

#### TREATMENT OF HÆMORRHAGE BY SUPRARENAL CAPSULE.

DR. SAMUEL FLOERSHEIM reports (*Medical News*, New York, January 4th, 1902) a further series of forty-five cases of hæmorrhage treated successfully by the internal administration of the suprarenal capsule. Of these twenty-one were cases of hæmoptysis, twenty-three were cases of uterine hæmorrhage, and one was a case of hæmatemesis.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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#### *SOME RECENT WORKS ON PHARMACOLOGY AND THERAPEUTICS.*

1. *A Text-book of Pharmacology, including Therapeutics, Materia Medica, Pharmacy, Prescription-writing, Toxicology, &c.* By TORALD SOLLMANN, M.D., Assistant Professor of Pharmacology and Materia Medica, Medical Department of Western Reserve University, Cleveland, Ohio. 8vo. Illustrated. Philadelphia and London: W. B. Saunders and Co. 1901. Pp. 894.

1. ALTHOUGH Dr. Sollmann modestly states that he cannot lay much claim to originality in the subject-matter presented in his book, we have no hesitation in saying that he has given in it an enormous and varied amount of information and instruction arranged in a most systematic and logical manner. The key-note of the work is the study of Therapeutics by the light of Pharmacology in the widest sense of that word, and the way in which the subjects discussed are treated gives the book distinction and originality.

The contents are divided into three parts:—

Part I. deals with the preparation and prescribing of medicines. It includes chapters on the following subjects:—(1) The Gross Anatomy and Chemistry of Plants; (2) Pharmacy and Metrology, with Equivalents of the Metric and Common Systems and Examples in Weighing and Measuring, and the Methods of determining the Specific Gravity of Liquids and Solids; (3) Pharmaceutic (*sic*) Methods; (4) Special Pharmaceutic Preparations, Pharmaceutic Assaying, and Tables of Incompatibilities and Solubilities; (5) An Outline of the Methods of Toxicologic (*sic*) Analysis; and (6) On Prescription-writing and Flavouring and Colouring Medicines. The latter subjects are too generally neglected in text-books on Materia

Medica, but attention to them is of great importance with the modern patient, and to the lack of such attention on the part of physicians is perhaps largely due the increased use of proprietary preparations.

Part II., on Pharmacology, Therapeutics, and *Materia Medica*, constitutes the largest and most important portion of the volume. After an introductory chapter the subjects treated of in the Part are classified, according to Buchheim's system, under two sections, A. and B. Section A. includes "Drugs whose main action occurs after absorption," viz., muscle-nerve poisons—*i.e.*, drugs whose action is specialised; and Section B.: "Drugs whose main action is a local one." According to this system drugs having most characters in common are placed together. In describing the drugs in each series or group in Section A. a definite plan is followed, which will materially assist the student, or anyone referring to the book for information on a special point. The members of the group are first named, and a succinct summary of their action is then given. This is followed by full details of such action upon the different systems and separate parts of the organism, the most important points being printed in display type. Then follows the fate of the drugs in the group in the organism; their relation to the drugs in other groups; their toxicology, fatal doses, treatment of poisoning by, therapeutic uses; *Materia Medica* (U. S. P. and B. P.)—the most important preparations being specially marked, as are also those that are not official—and, lastly, the diseases treated specially by the drugs of each group.

A number of constitutional formulas showing the structure of certain drugs, and their relation to each other, are interspersed through this part of the volume. There are also several cardiomyograms and figures of tracings showing the action of drugs on blood pressure and on respiration, as well as numerous other diagrams and useful tables.

In Section B. of Part II. the drugs whose main action is a local one are described. This part includes most of the inorganic drugs, and such organic ones as act upon any tissue with which they come in contact. For ex-

ample, irritants, corrosives, astringents, &c., and also drugs acting upon nutrition. A careful account is given of the theory of ion action, and the effects of the different ions are fully described, as is also general salt action.

Part III. is quite a new feature in works on Pharmacology, and one which we welcome. It consists of a series of practical exercises for the student, with descriptions of chemical experiments—such, for example, as the methods of searching for alkaloids in organic mixtures, the general tests for alkaloids, and experiments for testing the effects of drugs on ferment action, and for showing their effects on the blood. There is also a chapter describing the simpler forms of apparatus and operations for experiments on frogs and on mammals, for the purpose of demonstrating the effects of drugs, with full details of the methods of performing the experiments. This section is illustrated by numerous wood-cuts. These experiments might well serve as a basis for class demonstrations. Even if they cannot be actually performed, their study will serve to render clear to the student many points in the action of drugs which he would otherwise find it difficult to comprehend.

In the Appendix there are very complete tables of the crude organic drugs by orders (animal and vegetable), showing the origin of each drug, the part used, and the group to which the drug mainly belongs. Also an equally full reference table of chemical drugs with the formula, solubility in water and in alcohol, and dose, metric and Apothecaries', of each. There is an excellent analytic index and dose-table which occupies 50 pages in double column.

From the foregoing *précis* of the contents of the volume an idea may be formed of the extent of the subjects treated of in it. As regards the completeness and the excellent manner in which this has been done we can speak with confidence. The recent additions to therapeutics of any importance—for example, the new substitution products of morphia, the production of anæsthesia by the subarachnoid injection of cocaïn in the lumbar region, the antitoxic serums, the use of suprarenal extract as a hæmostatic, &c.,

are described. Many valuable points of treatment in certain diseases are discussed—*e.g.*, the therapeutics of asthma, and the proper therapeutic uses of such drugs as strychnia, caffein and digitalis. Altogether the work is one which for study as well as for reference we can thoroughly recommend.

2. *Text-book of Pharmacology and Therapeutics.* Edited by W. HALE WHITE, M.D., F.R.C.P.; Physician and Lecturer on Medicine, Guy's Hospital, London. Royal 8vo. London: Young J. Pentland. 1901. Pp. 1040.

2. Dr. W. Hale White, the author of an excellent and popular work on *Materia Medica and Pharmacy, &c.*—now in its fifth edition—has in the production of this “Text-book of Pharmacology and Therapeutics” secured the assistance of several able coadjutors. So far as we know, there is no similar work on the subject in the English language, consisting as this one does of a collection of special articles by experts on the different subjects treated of. The list of contributors includes the names of twenty-nine writers, nearly all well-known and recognised authorities, who have been selected from England, Ireland, Scotland, and the United States of America.

The work opens with a lucid article on the Relation between Chemical Constitution and Physiological Action by Mr. F. G. Hopkins, M.B., Lecturer on Chemical Physiology in the University of Cambridge. This is followed by a chapter on The Action of Gases, by Dr. Haldane, Lecturer on Physiology in the University of Oxford, in which an account is given of the effects produced by breathing air which has been altered in composition by addition, or withdrawal, of any of the more commonly occurring gases, or which is under increased or diminished pressure; also of the manner in which the air of inhabited rooms, mines, &c., may be altered in composition. The Practical Application of Anæsthetics is next ably set forth by Mr. Rowell, the Senior Anæsthetist of Guy's Hospital. This is a most useful article, and one which it would be an advantage to anyone who has the responsibility of administering an anæsthetic to study. Dr. John Rose

Bradford, F.R.S., contributes articles upon Chloroform and Ether (with Mr. L. A. Hill, F.R.S.) and upon Alcohol, Cardio-Vascular Toxics, Ergot, Diuretics, Cantharis, and Jaborandi, all of which are of much interest. In connection with pilocarpin it is stated that it may be used for diagnostic purposes in certain cases of disease of the spinal cord, more especially in transverse lesions. "The portions of the periphery still remaining in connection with the central nervous system will respond to the drug, and sweating will occur most readily in that portion of the skin which is still in connection with the grey matter of the spinal cord, inasmuch as the sweat nerves are derived from this grey matter. In this way the level of an injury or disease of the spinal cord may sometimes be accurately determined by the area of sweating, and useful and corroborative information obtained."

The Aconite and the Muscarin groups of drugs are treated of by Professor Cash, F.R.S., of Aberdeen University. Another Scotch University Professor—Dr. Stockman, of Glasgow—is the largest contributor to the volume. The most important of his articles are those on Opium, Iron and Arsenic. Professor Marshall, of the University of St. Andrews, also contributes a number of articles—*e.g.*, on Cannabis Indica, Cinchona Bark and its Alkaloids, Salicylic Acid and Salicylates, &c. Dr. Shoemaker, of Philadelphia, is the author of the articles on Mercury, Iodine and Iodides, and on Iodoform. They are excellent and suggestive. He advocates the administration of iodide of potassium in large doses (45 to 90 grs. daily) in acute pneumonia, and he quotes Walter as successfully treating cerebro-spinal meningitis in the same way—"the remedy acting almost like a specific." "It may," he says, "be advantageously combined in such cases with potassium bromide."

Professor Cushny, of Michigan University, U.S.A., whose valuable Text-book of Pharmacology was reviewed in this Journal in May last, contributes articles on Nux Vomica, Gelsemium, and Physostigmin. And Professor H. A. Hare, of the Jefferson Medical College of Philadelphia, the eighth edition of whose well-known Text-book of

Practical Therapeutics was also recently reviewed in this Journal (December, 1900), writes upon Antipyretic and Analgesic Drugs of the Coal-Tar Group. Other well-known contributors, in addition to the editor, are—Drs. A. E. Garrod, Sidney Martin, Thomas Oliver, G. H. Savage, G. V. Poore, Nestor Tirard, R. B. Wild, Walter George Smith, and the late D. J. Leech. Dr. Hector Mackenzie's article on "Organo-therapy," and Dr. Washbourn's one on "Serum-therapy" are both well up-to-date. There are, also, able articles upon Antagonism, Diet, Climate, The Open-air Treatment of Phthisis, and Health Resorts of the United States. And the volume concludes with an admirable essay by Dr. J. H. Bryant, of Guy's Hospital, on the "Uses of Electricity in Medicine."

In giving this general *résumé* of the contents of the volume it should be noted that—as, indeed, is acknowledged by the editor—the classification adopted is imperfect. The arrangement of many of the articles is vague, and without relation to each other. There is, however, a very full index, and the ample list of references appended to each of the articles adds to the value and importance of a work which may be consulted and studied with advantage by anyone who desires to have an accurate knowledge of the mode of action of remedies and of toxicology.

3. *Therapeutics: its Principles and Practice.* By HORATIO C. WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics, &c., in the University of Philadelphia. Eleventh Edition. 8vo. London: Smith, Elder and Co. 1902. Pp. 850.

3. The first edition of Wood's Therapeutics was published in 1874. We remember it as a pioneer work. It was, we believe, the first treatise in the English language in which the study of Therapeutics was set forth on the basis of the physiological actions of drugs. The great success the book has achieved is proved by its having since passed through ten editions. This, the eleventh edition, has been remodelled and in greater part re-written, and the author has been assisted in the work by his son, Dr. Horatio C. Wood, junior—one of a third generation of a family of distinguished Pennsylvanian physicians.

While the essential features of former editions have been preserved, the principal changes in the new edition consist in a re-arrangement of the various articles and in putting in small type the general effects produced by drugs in the lower animals, and other matters of lesser importance. The numerous references that in former editions were in the body of the text are now placed at the end of the various chapters. There are articles on a number of new remedies, and a summary (in Egyptian type) of the actions of most of the important drugs is also given.

As representing contemporary knowledge of physiological therapeutics, and as a useful work of reference to the practitioner, the present edition more than maintains the reputation the preceding editions have made.

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#### RECENT WORKS ON ANATOMY.

1. *Gray's Anatomy, Descriptive and Surgical.* By HENRY GRAY, F.R.S. Fifteenth Edition, edited by T. PICKERING PICK, F.R.C.S., Consulting Surgeon to St. George's Hospital; and by ROBERT HOWDEN, M.A., M.B., C.M., Professor of Anatomy in the University of Durham. London: Longmans, Green & Co. 1902.

1. ONCE more we welcome our old friend "Gray," as he makes his bow, now for the fifteenth time, on the anatomical stage. Though age bring decrepitude to most things human, it cannot be said to do so in the case of the book which lies open before us, for we can truthfully say that never before has Gray shown more life and vigour than in the present edition. Reading carefully between the lines, we think we can trace the improvement, largely, to the hand of Professor Howden, who for the first time has worked as co-editor of the book. Heretofore it has been the custom to appoint as editors, surgeons or surgeon-anatomists—men to whom as a rule the calls of large practices left little time for anatomical research. Consequently, whilst Gray always presented a good account of the surgical side of anatomy, the more purely anatomical or scientific aspect was rather slipshod in its treatment,



and was wanting in that accuracy and vigour which are necessary in all scientific text-books at the present day. Now we can detect the hand of the anatomist in the book, and whilst Gray still holds its place as a thorough guide to surgical anatomy, at the same time it gives a much sounder rendering of the scientific aspect of the subject than it has ever done in the past. Some may think this rather a disadvantage than the reverse, for there are those who can appreciate but one side of the subject—namely, the utilitarian, as tested by its application to medicine and surgery. Happily there are many others—constituting the great majority, we would fain hope—who can see something more in the science, and who can recognise in its careful study one of the best means of developing the young medical mind, and of training it in that faculty of observation which, above all, our students should cultivate.

The most striking improvements in the book are to be found, we believe, in the chapter on Embryology, which is much extended, excellently illustrated, and brought well up-to-date. The introductory section on general anatomy is also greatly improved, as are the parts devoted to the special sense organs and the brain and cord. In addition, there has been a general “polishing up” all round, as a result of which we may say that Gray is now a good, sound, and, at the same time, a simple text-book, which may be consulted with safety on all ordinary points of anatomy. It does not pretend to be an advanced work, but merely a student’s text-book, and he who seeks in it for the tit-bits of the subject may come away disappointed. But it may be accepted as a reliable guide by the practitioner, and by the student preparing for all ordinary anatomical examinations.

Whilst we can say so much in its praise, we should not fulfil our duty as critics did we not point out any defects or inaccuracies which strike us in the book.

One of its chief defects, to our mind, is the wholly artificial and useless—not to say ridiculous—method of representing arterial relations by a circle with a column of names on each of its four sides. The plan is positively vicious; it tempts the student to get a string

of relations off by heart, parrot-like, without understanding one of them. This method has always been a blot on Gray—it is, perhaps, its greatest drawback at present. As regards inaccuracies, we would point out the following, which have caught our attention:—The orientation of Fig. 16 is wrong and very misleading; the succeeding illustration is worthless. The ossification of the coccyx on page 19 is entirely inaccurate. The groove on the outer surface of the squamous portion of temporal is not for the deep temporal arteries, as stated on page 33. The orientation of Fig. 32, on page 35, is very faulty. Why describe the surface of the petrous portion of temporal bone, which looks chiefly upwards, as anterior instead of superior, at page 37? The extensor indicis is very inaccurately marked on Fig. 101. At page 126 a favourite weakness of Gray—namely, heaping as many things as possible on to an unoffending line or ridge—is indulged in, where the supinator brevis, flexor sublimis, and flexor longus pollicis are all attached to the oblique line of radius—an arrangement which gives the student much trouble, and has no advantage, even on the score of accuracy. We find the same thing in connection with the vertebral border of scapula, the oblique line of tibia, and elsewhere. In Figs. 179 and 181 the ligamentum teres is not correctly represented. The *nerve* to the crureus is inaccurately described at page 769. The base or root of the tongue, on page 792, is “directed *backwards* and connected with the os hyoides by the hyoglossi,” &c. At page 831 the helix major is made arise from the “*cauda helix*,” which is quite at the opposite border of the ear. At page 854 the cingulum of the incisor teeth is described as a *groove*! On the next page it is stated that the root in the bicuspid teeth is generally bifid. The root is said to be divided into from two to *five* (!) fangs in the molars. On page 856 the crown of the first upper molar “has occasionally *five* (!) cusps;” the second lower molar has usually *five* (?) cusps; and the third lower has usually *five* (?) cusps also. Indeed, it may be said that the teeth have been very poorly and very inaccurately described. There are only a few lines about the temporary teeth.

At page 908 it is said that the sigmoid flexure of the

colon is entirely surrounded by peritoneum; this is not usually the case in its first few inches. It is also said that its loop hangs down "sometimes into the true pelvis"—the fact being that it is almost invariably found there. Fig. 501, page 909, is very crude, and the supra-renals are entirely inaccurate in their form and position. It is not correct to state (page 959) that the *two* pulmonary veins are in front of the other structures in the root of lung. The circular muscular fibres do not form a continuous layer over the whole extent of the stomach, as stated at page 890.

A number of the later pictures produced by a rather crude process-method are next to worthless—for example, Figs. 211, 242, 564, 565 and 576, all of which might be removed without loss to the book. Other illustrations again, like Figs. 532, 501, &c., are very poor productions; and others still, like Flower's diagrams and the picture of the posterior divisions of the cervical nerves, "never would be missed." At the same time, the well-known old woodcuts, strong, bold, and striking, which have had so much to do with making the reputation of Gray, are still retained, and look veritable kings amidst their later shoddy rivals.

Of the "get-up" of the book nothing need be said, for no change has been made in either cover, type, or paper, all of which are well known and appreciated.

Old though he has grown in the service, there is still, we believe, a long future of usefulness before our ancient friend "Gray."

2. *Hand Atlas of Human Anatomy.* By WERNER SPALTEHOLZ, Extraordinary Professor of Anatomy in the University of Leipzig, with the advice of WILHELM HIS, Professor of Anatomy in the University of Leipzig. Translated from the third German edition by LEWELLYS F. BARKER, Professor of Anatomy in the University of Chicago; with a Preface by FRANKLIN P. MALL, Professor of Anatomy in the Johns Hopkins University, Baltimore. Leipzig: S. Hirzel. Vol. I.: Bones, Joints, Ligaments.

2. In this work, the first volume of which lies before us,

we have an English translation of Professor Spalteholz' magnificent Atlas of Anatomy, well known to all anatomists in its German form for several years.

The plan of the work is as follows:—The upper half or three-quarters of each page is occupied by one or more illustrations of the various parts—bones, joints, or ligaments—included in the volume. These are represented, as a rule, from every point of view, and are often supplied with outline key illustrations. The lower part of the page is devoted to a short, systematic account of the part illustrated, and the whole forms a very excellent and intelligible description of the organs treated in the volume. But the great feature of the book is its magnificent and realistic illustrations—the most beautiful, and the most truthful, we believe, which have ever appeared in an anatomical atlas. They are all reproduced by a very perfect “process” method (? collotype), from beautiful wash drawings, made to represent photographs of the parts illustrated. The result is all that the artistic or anatomical eye could desire, and we strongly advise all who desire to have the most perfect anatomical illustrations of the day, to secure Professor Spalteholz' beautiful work.

3. *A Manual of Practical Anatomy.* By the late PROFESSOR ALFRED W. HUGHES, of King's College, London. Edited and completed by ARTHUR KEITH, M.D., F.R.C.S.; Lecturer on Anatomy, London Hospital Medical College. In Three Parts.

3. Part I.—*The Upper and Lower Extremities.*—This work comes primarily from the pen of the late Professor Alfred Hughes, who recently lost his life in the noble cause of charity. He was chiefly responsible for the promotion of the Welsh Hospital, which did such good work in connection with the war in South Africa. In the discharge of his duty there he contracted typhoid fever, and barely lived to see his native land before he died in November, 1900, at the early age of 39. In his death all British anatomists lost a brilliant and charming colleague, all students of medicine a kind and enthusiastic teacher, and

all who had the pleasure of his acquaintance a true and honest friend.

The work which Professor Hughes had left unfinished has been completed by one of the most brilliant and energetic of the younger anatomists of these countries—Dr. Keith—than whom no more capable editor could have been found.

Turning to the book itself, although we desire to speak with all gentleness of the work of one whose end was so sad, we fear it does not come up to the anticipations which we had formed from a knowledge of Professor Hughes' ability. We in Ireland who use—almost exclusively—Professor Cunningham's *Practical Anatomy* have become very fastidious in the matter of dissecting manuals. Only in one regard did we think there was room for improvement in our favourite dissector, and evidently the idea in the mind of the present author was to make good this defect—namely, the want of a sufficient number of illustrations in Professor Cunningham's book—but we are compelled to say that although the illustrations are numerous, and many of them have been reproduced, with considerable trouble, in colours, yet they are not satisfying; indeed, some of them are anything but satisfactory.

As regards the text, it is, so to speak, uneventful, and entirely wanting in any special features of novelty or interest. The descriptions run on the usual lines. There is, however, a failure to distinguish between important and unimportant structures, by type or otherwise, which is a great defect to our mind; whilst occasionally unnecessary detail is indulged in. The directions for dissection are, on the whole, good, but brief.

We must not omit to call attention to several really good and bright sketches, drawn either by Dr. Keith, or under his direction by Mr. H. Balean, which, in our opinion, form the redeeming feature of the book. The rather crude pictures of the bones, said in the preface and elsewhere to have been taken from Holden's *Osteology* (although claimed recently by another author), might, we think, have been replaced by something better.

Surely the order of branching shown in the, otherwise

excellent, diagram of the popliteal artery at page 161 is not correct; in it, too, the size of the upper articular arteries has been reversed. Again, in the figure on page 164 the deep femoral artery is shown lying to the inner side of the superficial femoral, immediately after its origin—a very uncommon occurrence.

On the whole, we fear we cannot grow enthusiastic over Hughes' Practical Anatomy, Part I. It is featureless, it lacks interest and "go," and it rarely reaches above mediocrity.

Part II.—*The Abdomen and Thorax*.—Since we wrote the above, Part II., containing the abdomen and thorax, has come to hand, and from the cursory look through it in which we have been able to indulge, it seems to be more satisfactory and more interesting than its predecessor. In fact, we think we can recognise more of Dr. Keith's work in the present part, and this probably accounts for its decided brightness as compared with the first. The text seems to have more individuality and verve about it, whilst some of Dr. Keith's sketches are most suggestive. We would refer particularly to his ingenious diagram to show the relation of the ureter to the neck of the uterus (in which, by the way, we imagine the obliterated hypogastric artery has fallen down somewhat from its normal position).

Part II. is a decided improvement on Part I., and if the rate of progression be continued we may look forward with interest to the appearance of Part III., which will be chiefly the work of Dr. Keith.

4. *Human Embryology and Morphology*. By ARTHUR KEITH, M.D., F.R.C.S.; Lecturer on Anatomy, London Hospital Medical College. Illustrated. London: Edward Arnold. 1902. Demy 8vo. Pp. 324.

4. To the anatomist, the earnest student of medicine, or the inquiring practitioner this is a charming book, full of interest and information, abounding in suggestions for those who like to look beneath the surface, and withal a book in which the application of scientific anatomy to practical surgery and medicine is never for a moment lost

sight of. Its name is to some extent misleading—but we can suggest no better—for it is not an embryology in the usual sense of the word, and it even presupposes in the reader a sound knowledge of both anatomy and embryology as ordinarily understood. It does not—except very rarely—look at its subjects from the ordinary text-book point of view, but is rather an anatomical “Who is Who,” or a kind of scientific Debrett, whose duty it is to lay bare the origin, present standing, and biological position of the various organs of man. In it we can learn both the family and the personal history of practically every structure in the body; from what insignificant beginnings some, now great—like the cerebral hemispheres—have sprung; and again, in other cases, how the mighty have fallen. Nothing in the whole range of anatomy—we might, perhaps, say in the whole range of medical or biological science—is more interesting than the romantic history of the various parts which go to make up the whole, known as man. And when we add that the work before us comes from the pen of one of the most brilliant British anatomists and morphologists of the younger generation, we need say nothing more to make it appeal to all our readers who have any interest in the scientific side of medicine.

The illustrations, as a rule, are rough, but extremely clear, sketches from the facile pen of Dr. Keith, and in almost every case they tell their tales in a most incisive manner.

As regards the book's utility to the surgeon we could give many examples—for instance, the explanation of the position of the cleft in cleft-palate on page 5; the remarks on the antrum of Highmore, and the mastoid antrum; the nature of imperforate anus and the post-anal gut, etc., and so on through all its parts.

Again, the work claims attention because, so far as we know, there is no other book of the same nature to be found, at least in English, and the enormous amount of information which it contains has to be laboriously gleaned from hundreds of different sources.

The book is so admirable both in conception and execu-

tion that we hesitate to find any fault with it. But if we are compelled, as devil's advocates, to produce at least one charge, we would point to its brevity, and the necessary condensation, and at times scrappy arrangement, which result from this cause—a defect which, however, can be easily remedied in a future edition.

Naturally, there are some views expressed in the volume with which we cannot wholly agree, but morphology is a subject which lends itself to so many different readings that considerable latitude must be allowed in this regard. At the same time we have come across a few statements which might be improved by revision—for instance, the description of the *plica triangularis* at page 44, and also Fig. 33 illustrating it; the statement that the mastoid antrum is covered by a plate of bone "about 20 mm. thick," the fact being that this plate is usually only 15 mm. thick; whilst the external semi-circular canal may be reached in some cases at a depth of 17 mm. We read at page 65: "It is the formation of the root that forces the crown of the tooth through the gum." So it was thought once, but the statement is not generally received at the present day (see Tomes's Dental Anatomy, 5th edition, page 211). The triangle or fossa of the ovary is not bounded above by the external iliac artery, as stated on page 82, but by the external iliac vein. But here we stop, for these are but small things, and we give with pleasure our final opinion, not only that the work before us fills a distinct want, but that it fills it most thoroughly, and we offer Dr. Keith our warmest congratulations on having produced one of the most interesting and successful anatomical books of the day.

5. *The Pocket Gray, or Anatomist's Vade-Mecum.* By the late EDWARD COTTERELL, F.R.C.S. Fifth Edition, revised and edited by C. H. FAGGE, M.B., M.S. Lond.; F.R.C.S. Twentieth Thousand. London: Baillière, Tindall & Cox. 1901.

5. That another edition of this well-known little book has appeared would seem to indicate that it meets a want—but a want with which we have no sympathy—a want which,



indeed, in our opinion, should go unsatisfied. The volume is what is known as a "cram-book." The poor student preparing for some mediocre examination is, apparently, supposed to commit its dreary lines to memory (for no elucidation or explanation of the dry statements are given), and, we might add, to forget them as soon as possible after he has passed through his trial. It is a soulless inventory of anatomical facts, without illustration, without explanation, lacking in interest, and entirely wanting in true utility and true anatomy. Were it in our power, we should gladly have all such books put out of the reach of students.

From the foregoing it will be observed that we approach the book not only without sympathy, but with a mind distinctly prejudiced against all such works.

The volume is well printed, neatly turned out, and handy, but there we fear our praise of it must end. We have looked casually through its text, and remarked the following in the few pages which we consulted:—Page 82, the uterine artery supplies the fundus of uterus, and the ovary; at page 142, the fourth nerve *pierces the free border* of the tentorium; page 191, "the sigmoid flexure is placed in the left iliac fossa"—no reference to the fact that the greater part of it usually lies in the pelvis. Again, on same page, the third part of rectum extends *from tip of coccyx* to anus. Page 192, the *under* surface of liver is related to the right suprarenal body; and the liver is not covered by peritoneum at the fissure of the ductus venosus. Page 194, the pancreas is "placed in the epigastric and *both* hypochondriac regions." The attachment of the mesentery, at page 200, is very inaccurate, as are the statements about the mesocæcum (which rarely exists) and the ascending mesocolon (another rarity). Page 219, the apex of the trigone of bladder looks *forwards*. Page 229, the sphenoidal cells (? sinus) open into the superior meatus of nose. Page 22, the *attrahens aures* is supplied by the auriculo-temporal nerve, and the *attolens* by the small occipital.

We shall wind up our notice of the book by giving verbatim its complete account of a muscle—*e.g.*, the "*Inferior constrictor*"; side of cricoid cartilage; oblique line

on thyroid and surface behind it; inferior cornu of thyroid cartilage (F)—fibrous *raphé* in posterior median line of pharynx (F) (Pharyngeal plexus, External laryngeal) [Squeezes food towards œsophagus in swallowing].” We should explain that (F) signifies fleshy attachment; -- separates origin from insertion; brackets, thus ( ) enclose the nerve supply, and thus [ ] the action of the muscle.

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*Nothnagel's Encyclopedia of Practical Medicine.* Small-pox (including Vaccination), by Dr. H. Immermann, of Basle. Varicella, by Dr. T. von Jürgensen, of Tübingen. Cholera Asiatica and Cholera Nostras, by Dr. K. von Liebermeister, of Tübingen. Erysipelas and Erysipeloid, by Dr. H. Lenhartz, of Hamburg. Whooping-Cough and Hay Fever, by Dr. G. Sticker, of Giessen. Edited, with additions, by SIR JOHN W. MOORE, B.A., M.D., F.R.C.P.I.; Professor of Practice of Medicine, Royal College of Surgeons in Ireland. “Saunders’ English Edition.” Philadelphia and London: W. B. Saunders and Co. 1902. 8vo. Pp. 682. Illustrated.

If one wanted a demonstration in the art of making an interesting book on a medical subject one could not do better than take up this volume. The authors know their subjects. But that is not always sufficient to rouse attention in one’s auditory. Here the matter is taken up and examined from all its sides, each side separately, and yet relatively to the others; so that at the close of the discussion we have a consciousness that we have seen and, so to speak, handled it for ourselves, and fully realised it in all its dimensions. In the discussion of each of the subjects with which the volume deals a chapter on the history and literature awakes our interest. This is not, as too often in English books, a cursory abstract occupying a few lines, and introduced rather for technical completeness than of artistic and educational purpose. In fact, the study of the history of medicine has yet to be created in these countries; it is as yet the privilege of leisured individuals: not a part of the general professional course. Yet for the physician

who would rightly comprehend his calling there is no more instructive and edifying study. We do not now refer to the history of medical politics, which, perhaps, has too much commended itself to the English mind, but to the history of medical ideas, of the conceptions of nature, of disease, of therapeutic purposes and processes, upon which our existence as a profession has from the earliest times been based. Such a study would give us more respect for our scientific progenitors, and, therefore, more trust in ourselves, as their offspring; while in the history of their errors we should learn to doubt the finiteness of contemporary theories. Nor is it necessary that this should be a barren historico-philosophical statement. In the book before us we have examples of various methods of exciting the reader's interest. Thus in the history of Variola the author concludes a paragraph graphically descriptive of the ravages of small-pox with the following sentence: "No wonder was it, then, that in the midst of such continuous small-pox misery, finally a widespread humour of despair found expression in the light words—'From small-pox and love but few escape.'" (On the other hand, the history of Whooping-Cough, marked by very great learning, is characterised in addition by a pugnacity which is really delightful. The question turns on the evidence that whooping-cough has been epidemic in Europe before the middle of the sixteenth century. Dr. Sticker thinks it insufficient, and accepts Guillaume de Ballou's account of an epidemic in Paris in 1578 as the first satisfactory proof of its existence in Europe. But for those who think otherwise, and whom he very justly quotes, he simply says—"The trail of whooping-cough is associated with mental delusion." We note these points to show that the history of Medicine, besides being of great importance as a factor in education, can be made a really living, absorbing study, and we are convinced that many a student would find his conception of latter-day theories facilitated if he were brought to them, rapidly no doubt, over the road which his forefathers had to travel.

The chapters on Small-pox and Vaccination, which together take up 279 pages, are of extreme interest at the present moment. Written in an easy style, without the

smallest padding, they present the natural history of the disease and the whole *raison d'être* of the preventive in as full and satisfactory a manner as could be desired. Perhaps one small qualification to the preceding statement might be made. It does not seem to us that the chapter on Diagnosis of Small-pox is quite full enough. No doubt he who has read and absorbed the account of the symptomatology will not desire it much longer; but he who, in a hurry when presented with a doubtful case, rushes for help to the pages on diagnosis, will wish it had been a little fuller. It will occur to him that he has little help on the distinction of a highly modified variola from varicella in the vesicular stage, or from a poorly-marked measles (suppose a second attack) in the papular one. Nor is the liability of syphilis to be mistaken for small-pox, as strongly suggested as it is in the vernacular English (and French) for the two diseases. The *amœba variolæ*, which has been recently described both in France and Germany, is described under Guarnieri's name of *Cytorrhycles variolæ*.

So far as Vaccinia and Vaccination go, nothing could be better. The historical method is here the natural one. The fact that a man suffers but once from small-pox suggested an agency for prevention as existent in the disease. Hence came inoculation, a remedy almost as bad as the disease. Then comes the recognition of a pock occurring in other animals—the cow, for instance; then the popular idea that to get the cow-pock was to be saved from the human one; then the marvellous humility of genius, which urged Jenner to inquire into the basis of what seemed little more than a superstition, and to prove so convincingly that in vaccination with cow-pox we have *the* preventive remedy for small-pox. The whole subject of vaccination, its history, statistics, the identity of the disease, in a modified form, with small-pox, the objections of its opponents of all kinds, are dealt with in a masterly manner. With regard to these last it is interesting to note that among the earliest arguments against vaccination was the somewhat theological one, that we were bestialising our higher natures by taking into our systems a material originally derived from the cow—apparently the absence of cooking made the theological

*gravamen*. One hundred years later the objection has rather been to inoculation from human being to human being, and the conscientious objector has his qualms soothed, in part at least, by giving him lymph direct from the calf.

The subject of Cholera, in the hands of von Liebermeister—whose lamented death we must all deplore—receives full and learned treatment. The Hamburg epidemic of 1892 corroborated all that had been previously held as to the part played by drinking water in the dissemination of the bacillus, whilst the difficulty which frequently attends the search for the cause of an outbreak is well illustrated by the fact that the originating case was not discovered either in Hamburg or even in a small epidemic which attacked the lunatic asylum of Nietleben in the following year. In fact, while it seems to be ascertained that in circumstances of normal exposure the cholera bacillus can live not more than three weeks outside the human body, there is still reason to believe that it may preserve its vitality for a much longer period under exceptional conditions. The only other theory apparently explanatory of such recrudescences of the disease is the supposition that a chain of mild unnoticed cases keeps up the life continuity of the bacillus, till it reaches a new and highly susceptible population in which it can re-assert its original virulence.

We should like, if space permitted, to analyse the article on Erysipelas, extending over 110 pages. We must content ourselves with saying that it will well repay study. The close connection between erysipelas and puerperal fever, the ætiology of erysipelas in hospital wards, the identity of the *Streptococcus erysipelatis* of Fehleisen with the *S. pyogenes*, as proved not merely in the laboratory but by the clinical interchangeability and concurrence of erysipelas and suppuration, and the employment of artificially induced erysipelas for the cure of inoperable new growths, are all discussed fully. The last question is summed up thus:—“The outlook for the cure of such diseases by erysipelas is consequently very dubious. Nevertheless, no objections can be made against such efforts, since otherwise such cases are surely lost.”

We have already referred to Dr. Sticker's article on Whooping-Cough. It is a most entertaining essay, full of scholarship, but with a personal tinge which makes one almost imagine that one is listening to a lecture. He is sceptical about the value of drugs in whooping-cough; but he inclines to attach some value to quinine and camphor. One sympathises with him when, discussing the difficulty of giving quinine to children, he inveighs against the false tenderness of the parents who preface the administration with—"You poor child, to have to take such bitter medicine." Yet we are not sure that the child or the parent would realise the value of his categoric imperative—"You must, since you shall; and you shall, since you can." The translator has faced, but not conquered, the difficulty of rendering the German *sollen* into English.

Dr. Sticker also writes a full and useful article on Hay Fever, or, as he calls it, Bostock's summer catarrh, from the English physician, John Bostock, who first described it in 1819. "The disease is called, with reason, an aristocratic one, since it moves almost exclusively in the best circles of society." The diathesis underlying it is "what the English and French call the arthritic, which expresses itself in the hereditary predisposition of families to rheumatism, gout, diabetes, corpulency, migraine, furunculosis, bronchitis, asthma, &c."

It may safely be asserted that no more readable and at the same time full and authentic book on the subjects treated in this volume is at present before the public. The translation from the German is excellent, and the editor, Sir John Wm. Moore, has made several most useful additions which bring the book quite up-to-date. Thus, under the head of Variola, he discusses the value of red light; under Whooping-Cough, that of bromoform and the method of avoiding the danger incidental to the administration of that drug. He thinks the red-light treatment has justified itself by results in Cork-street Hospital, Dublin, but we should like to have the corresponding results in the Hardwicke Hospital, where the method was not tried during the same epidemic.

The editor is careful to explain in his preface that he is

not responsible for the "reformed" spelling in this volume. That is to say, that he accepts under protest the American printers' preference for "center" and "luster" and "specter" to "centre" and "lustre" and "spectre." We confess we have no such qualms about the new spelling. Why should we insist on a continuity of spelling when we have dropped the continuity of pronunciation? One word, however, has shocked our eyes—"edema" for "œdema" is somewhat offensive even to our orthographical tolerance.

We cordially recommend the volume as one of the fullest and at the same time most interesting medical works we have ever read, while the excellence of its typography is a lesson to English book-producers.

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*The Accessory Sinuses of the Nose.* By A. LOGAN TURNER, M.D., F.R.C.S. Edinburgh: William Green & Sons. 1901. Pp. 204.

THE subject dealt with in this book is one that was passed over in silence by surgical writers up to quite recent years. Lately, however, the lethargy seems to have been thrown off, and many able writers have given us the benefit of their experience in the diagnosis and treatment of these interesting affections. The work before us may be classed among the best. The author has given us a short and fairly complete account of the anatomy, pathology, ætiology and treatment of the diseases of the sinuses. The anatomy—or what is better spoken of as pathological-anatomy, as it includes various departures from normal—is clear and easy to understand, and the portion devoted to the frontal cavity very full; in fact, here the author ranges far afield into the region of comparative anatomy, and gives very interesting comparisons between the frontal sinuses of various races. Less has been said about the other cavities, and it must be remarked that this portion of the otherwise excellent work is too short, and some well-known exceptions and anomalies have been omitted; especially is this the case with the antrum of Highmore and ethmoid sinuses. All the plates are on separate paper, interleaved, and put so that they are

opposite the letterpress. They are forty in number, and are worthy of the highest praise, not only for the execution—which is very good—but also for their subject-matter. No book, so far as the reviewer knows, except the Nasal Anatomy of Zuckerkandl, contains such a complete set of plates of the nasal fossæ. The chapter on the major operations on the sinuses is excellent, and the differential diagnosis follows the lines laid down by Grünwald and Hajek, which is equivalent to saying that it is on a sound basis.

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*Manipulation (or Massage).* By JOHN ANDREW PETERS.  
Newcastle-on-Tyne: Longhurst. M.C.M.I.

MR. JOHN ANDREW PETERS holds no medical qualification, has not undergone a systematic study of medicine, and although he has published, or had published, a beautifully-bound and printed volume on massage, and told us of its advantages in certain forms of disease, his lack of technical knowledge of the subject makes his book of no value from a medical standpoint.

From the introduction we learn that the author's father found the business of a masseur a profitable one, and that the author's brothers find it remunerative. Indeed, the author himself finds it money-making. With commendable discretion no member of the family joined the medical profession. They are, therefore, free to advertise and puff their specialty. The author also tells of many "rubbers" who attained celebrity and amassed fortunes, but he leaves out all mention of the most notorious, most popular, most successful—Greatreakes.

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*Rough Notes on Remedies.* By WM. MURRAY, M.D.  
Fourth Edition. London: H. K. Lewis. 1901.  
Pp. 176.

THE appearance of a fourth edition in such a short period is a good proof that this little book has filled a want. The additions in the new issue are not an improvement. They consist of a Sketch of Rothbury, of the usual Medico-



Guide-book type—an expansion of “If there’s a heaven on earth, it is this, it is this.” The chapters that appeared in former editions are interesting and suggestive in these days of improved pharmaceutical products. It is good for practitioners to have old remedies brought before them, and the chapters on Belladonna, Arsenic, Mercury in Heart Disease, Calomel, and Nitrate of Silver contain many useful hints.

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*“First Aid” to the Injured and Sick; an Advanced Ambulance Handbook.* By F. J. WARWICK, M.B., and A. C. TUNSTALL, M.D. Seventh Thousand. Bristol: John Wright and Co. 1901. Pp. 232.

THIS is a well-arranged and well-illustrated handbook, and although needlessly full for the use of ordinary ambulance pupils, it will be found helpful to lecturers. It will also be found useful by hospital dressers and by nurses in surgical wards. Of the nearly 200 illustrations the great majority are new, and are very clearly drawn.

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*A Short Practice of Midwifery, embodying the treatment adopted in the Rotunda Hospital.* By HENRY JELLETT, B.A., M.D., F.R.C.P.I. Crown 8vo. Third Edition, revised and enlarged. 124 Illustrations. Pp. 533. London: J. & A. Churchill. 1901.

THE appearance of a third edition of this work in the space of as many years is proof that we did not exaggerate its importance when the first edition was published, and that we do not stand alone in holding the opinion that it forms a very valuable addition to obstetric literature.

The book has been enormously improved, and the author is now able to state his opinions with an authority to which his enlarged experience fully entitles him.

It does not aim at being anything more than a practical and safe guide to the practice of midwifery, and we know of no other work of a similar size so well adapted to guide the inexperienced practitioner to the performance of safe obstetrical practice, leading him by minute detail

through the various steps that make for success. Take, for example, Dr. Jellett's description of abortions in respect to their treatment. Could we require any more concise, and at the same time comprehensive, handling of the subject? Ignoring altogether the pernicious classification of "Threatened" and "Inevitable" abortions, he considers that rate and strength of pulse, and the amount of hæmorrhage, are the proper indications for active interference. In describing the procedure for emptying the uterus of its contents he, in common with many others, advises that an attempt be made to pass one or two fingers into the uterus in order to loosen the ovum from its attachments, but he is careful to precede this advice by the statement that as much of the hand as is necessary should first be passed into the vagina. We have rarely seen this advice before in print. It is about the last idea that will occur to the uninstructed beginner, and yet it is in many instances quite impossible to reach the fundus of the uterus by the fingers without the insertion of at least half the hand in the vagina.

Again, how many gentlemen approaching their first case of abortion are aware that a finger placed in the cavity of the uterus is incapable of picking out its contents, or that it is at all necessary to follow closely the procedure here indicated.

The appendix of this work greatly enhances its value, setting forth as it does the statistics of the Rotunda Hospital for the past nine years.

The author very properly makes these the justification for many of his statements, and bases calculations on them, knowing, as he does, the great efforts made to render them accurate.

It is not necessary to bring our readers page by page through this excellent work, which teems with useful information, always presented in a manner more or less novel.

Old students of the Rotunda will find in it much of the time-honoured teaching of that great institution. They will also easily recognise Dr. Jellett's clear and incisive style, and trace his individuality throughout the book.

In conclusion, we can strongly recommend the book as an efficient examination manual for Irish students, though for those competing for English or Scotch examinations we warn students that some of Dr. Jellett's views, and more particularly those held in respect to the treatment of accidental hæmorrhage, would be considered heterodox.

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*Selected Essays and Monographs, chiefly from English Sources.* Braxton Hicks, Bodington, Hodgkins, Paget, Humphrey, Ehlers. With Obituary Notice of the Society's late Treasurer, Dr. Sedgwick Saunders. London: The New Sydenham Society. 1901. Vol. CLXXIII. 8vo. Pp. 325.

THE present volume is rather miscellaneous in its character. It consists of a series of essays and monographs, which are of great medico-historical interest, such as Dr. Braxton Hicks' papers on Gynæcological Subjects, Hodgkins' article on Diseases of the Lymphatic Glands, papers by Sir James Paget and Sir George Humphrey. But the principal essay in the collection is Mr. George Bodington's "On the Treatment and Cure of Pulmonary Consumption"—a short essay, published as far back as 1840 by Longmans. The Society was well advised to include the paper among those of the masters of medicine. Its excellence deserved it, and as it is long out of print the subscribers may naturally be expected to desire to possess a copy of the famous medical pamphlet that vindicates for British medicine the honour of removing tuberculosis from the list of incurable diseases.

The essay had become so scarce that its name does not appear in the Index Catalogue of the Library of the Surgeon-General of the U.S.A.

As a historical paper of rare value we commend Dr. Edward Ehler's "Danish Lazar Houses." The thoroughness with which the work is done leaves nothing further to be desired on the subject. Will some English physician ever do as much for the "Spitals" of the middle ages? We have descriptions of special hospitals, but as yet no history of the growth of hospital extension in the country.

The majority of the older subscribers to the Society are familiar with the other papers in the volume, but we fear that many of them are unknown to the younger members, who would from reading them find that the authors had secured position and reputation in the profession by profound study of the more difficult problems that in their day were discussed in the medical world.

Since 1858 the New Sydenham Society has enriched the medical profession with many excellent translations and reprints, atlases, and so forth, and be it not forgotten that to the Society we are indebted for the finest medical Lexicon ever produced. We hope, therefore, that the Society will continue to receive that generous support from the profession that its good work has so well deserved.

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*Artificial Feeding and Food Disorders of Infants.* By W. B. CHEADLE, M.A., M.D., F.R.C.P.; Senior Physician to St. Mary's Hospital; Co-Lecturer on Clinical Medicine in St. Mary's Medical School; Consulting Physician to the Hospital for Sick Children, Great Ormond-street. Fifth Edition. Edited and revised by F. T. POYNTON, M.D., M.R.C.P.; Assistant Physician to the Hospital for Sick Children, Great Ormond-street; Medical Tutor to St. Mary's Hospital. London: Smith, Elder & Co. 1902.

THIS volume is a series of lectures by Dr. Cheadle, delivered in the Post-Graduate course at St. Mary's Hospital, and at the Hospital for Sick Children, Great Ormond-street. Dr. Cheadle makes no apology for these lectures, for the difficulties connected with the subject are many, the number of children who must be fed artificially is great, while "a large proportion of the diseases of early life, some of the most fatal, and some of the most lasting in their influence, have their origin in errors of diet." Moreover, it is "a question which affects the whole future of the child," and "a matter of National Hygiene." Dr. Cheadle rightly says "There is a lack of correct and precise knowledge on this subject, not only amongst students but amongst medical men in active practice also; and even more than this, a great deal of positively erroneous belief and of mistaken practice

founded upon it. The main cause of this serious deficiency is to be found, I think, in the fact that the subject is neglected in our medical schools. It is either not taught there, or only in vague generalities and in desultory fashion. No accurate and scientific exposition of it is to be found in the ordinary text-books." These are valuable plain statements of fact. Human milk is taken as the type of infants' food and artificial feeding is skilfully explained. The essentials of proper feeding are well put before the reader, the dangers of starch, the importance of fat or cream, the need for the antiscorbutic element being in all mixtures, its absence in farinaceous foods, and the gross error of giving infants vegetable food instead of animal.

"The six essential conditions to be observed in the diet of infants" are well laid down as follows:—

1. "The food must contain the different elements in the proportions which obtain in human milk."
2. "It must possess the antiscorbutic element."
3. "The total quantity in twenty-four hours must be such as to represent the nutritive value of 1 to 3 pints of human milk, according to age."
4. "It must not be purely vegetable, but must contain a large proportion of animal matter."
5. "It must be in a form suited to the physiological condition of the digestive functions in infancy."
6. "It must be fresh and sound, free from all taint of sourness or decomposition."

Much information will be found in the book. There are six lectures. The first three on artificial foods, and the last three on the various diet diseases or food disorders and their treatment.

The food disorders are divided into—I. Diseases of Irritation, and II. Diseases of Malnutrition. The former include—Dyspepsia, Dilatation of the Stomach, Gastro-enteritis, Chronic Diarrhœa, Constipation, Thrush and Stomatitis. While the second division comprises Atrophy or Marasmus, Anæmia, Acholia, Rickets, Achondroplasia or Fœtal Rickets, and Scurvy. These diseases are treated mainly in relation to their food origin, but are ex-

cellently explained, Rickets and Scurvy being specially well handled.

We cordially commend this book to the attention of our readers. It is the outcome of much practical study. One misses the usual arrangement of chapters, but its division into six lectures is excellent. We would suggest that Part I. and Part II. should be introduced into the next edition to divide the two subjects treated of, while the admirable headings to each paragraph of the book would better arrest the attention if they were in darker type.

We congratulate Dr. Cheadle on the admirable material contained in this fifth edition, which well holds its place as one of our soundest manuals on the subject, and also on his having secured the assistance of so sound an observer on diseases of children as we know Dr. Poynton to be.

*Atlas and Epitome of Ophthalmoscopy and Ophthalmoscopic Diagnosis.* By PROFESSOR DR. O. HAAB, of Zurich. Authorised translation from the third revised and enlarged German edition. Edited by G. E. DE SCHWEINITZ, A.M., M.D. With 152 coloured lithographic illustrations. London and Philadelphia: W. B. Saunders and Co. 1901.

THE editor, in his preface, makes no apology for issuing a translation of so valuable a work as Professor Haab's Atlas, which has already gone through three German editions.

In it the student is made acquainted with carefully prepared ophthalmoscopic drawings of the most important fundus-changes, and in many instances plates of the microscopic lesions are added. A few figures have been added by the editor—namely, those showing angioid streaks in the retina, and the ophthalmoscopic appearances seen in arterio-sclerosis. The first 80 pages are devoted to preliminary descriptions of the ophthalmoscope, the examination of the fundus by the direct and the indirect methods, the size of the visual field, the shadow test, the choice of an ophthalmoscope, the pulsation phenomena, &c.

Then follow the coloured lithographic pictures, of which there are 152 contained in 80 figures. Each figure is faced by a page of explanatory text, so that there is no delay or annoyance in looking from the drawing to the text, an arrangement which might with advantage be followed in some of the other atlases that we have seen. The drawings are for the most part excellent, and the explanatory text is full and satisfactory.

The microscopic pictures of the changes in some of the most important degenerations are a valuable addition to this volume, and the pupilometric table which has recently been added will prove of use in many cases.

We have very great pleasure in recommending the Atlas to all who require a handy and comprehensive set of drawings of the eye-fundus and its diseases.

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*The Edinburgh Medical Journal.* Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. X. Edinburgh and London: Young J. Pentland. 1901. 8vo. Pp. 600 + xxxvi.

DR. GIBSON, with this volume, completes his fifth year as editor of the *Edinburgh Medical Journal*. *Floreat ad multos annos!* The richness of the paper, the clear cut type, and the beauty and finish of the many illustrations with which the volume is enriched together make the *Edinburgh Medical Journal* a model monthly periodical. Nor does the matter show any falling off under the several headings "Original Communications," "Clinical Records," "Reviews of British and Foreign Literature," "Recent Advances in Medical Science," "Reports of the Medical Societies," "Analytical Reports," and "Monthly Notes on Meteorology and Vital Statistics." This arrangement of the subject-matter, it will be observed, is very similar to that which has characterised our own Journal for many years.

## PART III. MEDICAL MISCELLANY.

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*Reports, Transactions, and Scientific Intelligence.*

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### ROYAL ACADEMY OF MEDICINE IN IRELAND.

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President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

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#### SECTION OF MEDICINE.

President—SIR CHRISTOPHER J. NIXON, M.D.; President, Royal  
College of Physicians of Ireland.

Sectional Secretary—R. TRAVERS SMITH, M.D.

*Friday, January 24, 1902.*

J. HAWTREY BENSON, M.D., in the Chair.

*Traumatic Functional Paralysis.*

DR. MARTIN DEMPSEY exhibited a case.

#### *Reference Committee Report.*

DR. J. J. BURGESS read the report furnished to him by Dr. McWeeney of the histological examination of the heart he exhibited at the last meeting. (1) Intense and uniformly distributed fibrinous pericarditis; non-tuberculous. (2) Extreme fatty infiltration of the anterior wall of the right ventricle. The nature of the material was readily demonstrated with osmic acid and sudan III. There is not the faintest indication of tumour formation. (3) A moderate amount of sclerosis of the coronary arteries, with thrombosis of the descending branches of one of them. (4) The source of the hæmorrhage was not ascertained.

#### *The Diagnosis of Scarlatina.*

DR. J. M. DAY read a paper on this subject. [It will be found at page 170.]



DR. DRURY recognised the difficulty in diagnosis of scarlatina, and the importance of a correct diagnosis, as many unpleasant results may follow on a mistake. Long confinement to bed may of itself produce desquamation; if the person is accustomed to a daily bath you may get almost no desquamation. Polishing of the finger-nails may escape observation.

DR. POLLOCK had observed two anomalous cases. In the first there were bad vomiting and sore throat, but no rash; on the tenth day he found some rash and desquamation. Six months afterwards the patient got a severe attack of scarlatina with otorrhœa, and died. The second case was marked by a sore throat, punctiform rash of palate, bleeding of mucous membrane of mouth, and inflammation of throat. On the seventh day the case proved to be one of gastric fever.

DR. RICHARD A. HAYES found the difficulty of diagnosis of scarlatina most pronounced in adults. In mild cases there was no constitutional disturbance; the typical scarlatina throat may be absent. He based his diagnosis principally on the punctiform rash of the hard and soft palate and the rapid pulse. Temperature was of little diagnostic value; desquamation was not easy of recognition in every case. He thinks there is a certain relation between the extent of the rash and the amount of desquamation.

DR. CRAIG was glad to hear such a practical paper. He isolates all doubtful cases. The author did not include the rash of influenza in his list; it is not infrequently followed by desquamation. Surgical scarlatina due to septic causes may be recognised by the absence of sore throat, and by the rash not extending to the face.

DR. DOYLE found the rash of belladonna to closely simulate scarlatina. He thinks that patients are sometimes sent out of fever hospitals without being medically examined before their discharge, which is wrong. Such a case came under his notice. The child was dismissed on a Tuesday, and on the following Thursday had the scarlatina rash on its body.

DR. MORE O'FERRALL would like to know from Dr. Day the incubation period of scarlatina, and the exact cause of scarlatina? Does Dr. Day examine the blood of scarlatina patients? It is done in Vienna. He has observed that scarlatina conveyed by milk is always of a mild type. He had two cases, one of which was under conditions for a week in which it was impossible that infection could be conveyed to her, and yet she got scarlatina. In the second case the patient's environment scarcely admitted of

infection for a full month, yet she took it. He had seen cases of an outbreak of scarlatina in a family, and found that the dark-haired persons were those who took the fever, the light haired-ones escaping. Dark-haired persons suffer more than fair-haired when attacked.

DR. HEARD thought desquamation may be deferred for a longer period than twenty-one days. He told of a series of cases in which desquamation was deferred for a month. Patients should be kept a longer time in hospital. He found a rash following on influenza to closely simulate scarlatina. In the "Fourth Disease" the skin peels in large patches.

DR. BYRNE found that Rötheln is met with only when scarlatina is epidemic.

DR. DAY, in reply, considered that there was a certain proportion between the severity of the attack and the rash. He was not inclined to extend the period of desquamation beyond twenty-one days. Hebrew children have a dark rash on the first day. He quite agreed with Dr. Hayes respecting adults. He did not know any surgical scarlatina. There may be septicæmia with a rash, or a surgical patient may contract scarlatina. No patient can leave hospital until examined by the physician. To find the exact cause of scarlatina he leaves to Dr. O'Ferrall's industry. The period of incubation, he thought, was generally known—it is not more than eight days. The mildness or otherwise of milk-conveyed scarlatina is dependent on the character of the epidemic. The infection is not so much due to the desquamation as was formerly believed. Any discharge, such as otorrhœa, may convey infection. He does not place reliance on the observation of nurses—he observes for himself. He looks on the "Fourth Disease" as non-existent, being no more than a form of Rötheln or rubella.

#### *Traumatic Functional Paralysis.*

DR. MARTIN DEMPSEY brought forward the following case :—A boy, aged about twelve, fell from a height a considerable distance on his right shoulder-joint. He did not appear to suffer much from the fall at the time, but the next day at school he was slapped for bad writing. The joint was X-rayed, and rubbed with an anodyne liniment for weeks, but without benefit. His right arm hung helplessly by his side, with his fingers slightly flexed at their terminal joints. At the slightest touch the boy complains of excruciating agony in the injured limb, as low down as the elbow-

joint. The slightest touch can be recognised on any part of it, though he cannot recognise hot water in a test tube, and yet has no difficulty in recognising the presence of cold water. A strong shove over the upper arm or scapular region of the side is not recognised; neither does he feel pin pricks in that region. All the muscles react to the faradaic current briskly. For two months the current was applied with distinct benefit, the boy regaining some of the power of the limb. He is now able to flex it, to raise it, to extend it to a certain extent, and he has a considerable grasping power in his hands. He looks on the case as one of functional or hysterical paralysis, and his prognosis is favourable.

DR. CRAIG agreed with Dr. M. Dempsey in his diagnosis. He had had a somewhat similar case in a girl.

DR. LANGFORD SYMES had seen many cases of functional diseases in the Great Ormond-street Hospital. By throwing them off their guard you usually succeed in your diagnosis. All the cases he saw were in boys, and he found them associated with phimosis. Dr. Dempsey's patient had a long foreskin.

DR. GOULDING asked was there any history of a sore throat?

DR. DEMPSEY replied.

The Section then adjourned.

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## SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. CUNNINGHAM, F.R.C.S., F.R.S.

Secretary—W. TAYLOR, F.R.C.S.

*Friday, January 31, 1902.*

THE PRESIDENT in the Chair.

### *Presidential Address.*

THE PRESIDENT thanked the Section for his election. He briefly reviewed the work done by its members during the nineteen years of its existence—work which reflected great credit on the Section both for thoroughness and originality. It seemed to him to have been marked by three great waves, which he would take the liberty of naming—the morphological wave, the cerebral wave, and the visceral wave. One of the first papers produced at the Section, and he thought the first printed, was that very excellent contribution of Dr. Phin. S. Abraham on the frequency with which the *musculus sternalis* was found in anencephalous fetuses. The paper was the outcome of intimate knowledge of

human and comparative anatomy and accurate observation. Throughout Europe it awakened interest, and by that single paper the Section at once became the centre of interest to all anatomists. Discussions throughout the world's Medical School took place on the subject, and the views of the Dublin School were opposed strongly ; but he was glad to say that the two papers of Eisler, of Berlin, and Wilson, of Melbourne, support the views put forward by Mr. Abraham in that room. The cerebral wave was created by the remarkably beautiful exhibition of cerebral photographs prepared by Professor Fraser. For their general usefulness and beauty of finish they have never been excelled. Professor Fraser has also been engaged on the study of the topography of the sinuses of the cranium, and his work in this direction has become a necessity, not alone to the anatomist, but also to the practical surgeon. Under his (Professor Fraser's) hands the cerebral wave had attained its highest point. The visceral wave included the splendid work done by Professor Symington, of Belfast, and that of Professors Fraser, Birmingham, and others. He hoped the Section would continue to do good work, and he thought the younger men might produce a collective investigation report. The production of such demanded hard work, constant work—the enthusiasm of youth.

*The Inferior Parietal Lobule.*

THE PRESIDENT read a paper on "The Inferior Parietal Lobule." It had become the practice of a considerable number of Continental anatomists to form an opinion of the sex, race, intelligence, and capability of the individual from an examination of the inferior portion of the parietal lobe of the cerebrum. He could not accept these views, although they were supported by a considerable amount of ability, and by the exhibition of a series of cerebral specimens of comparative anatomy and the cerebrums of human beings—knaves, fools, and philosophers. [Here a number of screen pictures were shown.] A theory put forward and supported by Retzius, Gutzsman, Hansemann and Ruge could not be lightly thrust aside without consideration, and it is to be borne in mind that the inferior lobule is late in development in the human being, and may fairly be considered as engaged in the higher function of cerebration. Withal he is driven to a diametrically opposite conclusion. In a certain series of brains specially prepared to show the development of this lobule from those of

the foetus to those of advanced life, he cannot see in many of them that the higher intellectual powers have always been associated with a larger and more complex gyrated lobule. Professor Cunningham exhibited a series of screen pictures of cerebrums in support of his views.

PROFESSOR COFFEY said he considered Professor Cunningham's demonstrations of the surface anatomy of the inferior parietal convolutions a most interesting supplement to Flechsig's work on the development of association fibres in the same area. How far such an area could be termed a place of intellectual operations in the brain depended very much upon the exact signification to be attached to the term intellectual. Intellect itself, he thought, was a question of capacities not necessarily associated with any area, but deriving the matter upon which it emanated, and through which it manifested its activities, from both the primary sense areas and the association centres alike. He thought that the slides shown bore out his view that these so-called intellectual areas in reality had to do with the conscious functions which were intermediate, so to speak, between primary sense representations in the brain and the higher psychical capacities. The latter had no place-representation whatever.

PROFESSOR FRASER cannot look on the brain in the same way. The mere surface scratchings on the outside of the sac convey nothing to him. A smooth brain has got all its lobes. The brain of a lunatic is quite as complicated as that of a mathematician ; and the man in the street may have a brain as complicated as the ablest.

PROFESSOR SYMINGTON was very glad to hear Professor Fraser's remarks. His statements conveyed a great deal of truth ; yet they knew very little as yet of localisation of function. But he cannot go the whole way with Professor Fraser ; the human brain has a differentiation of function which is not to be found in that of fishes. Like Professor Cunningham, he is doubtful of the localisation of special intellectual ability in the inferior lobule of the parietal lobe. He was thankful to Professor Cunningham for having brought the matter forward, and with him he agrees that the better developed brain is possessed by the highly civilised.

PROFESSOR CUNNINGHAM thanked them for the interesting discussion his paper elicited, and he felt it due to Professor Fraser to say that with a great deal of what he said he fully agreed.

*Congenital Malformation of the Hands.*

DR. ALLWORTHY'S paper on this subject was, in the absence of the author, read by the SECRETARY of the Section.

The photograph and radiograph taken by Dr. Allworthy are of a man's hands, aged thirty, who was a seven months' twin. All the bones of the middle finger are absent in the right hand. The first phalanx of the left index finger evidently developed across the palm of the hand, as shown in the radiograph, and its pressure wedged the bones of the second and third fingers into each other, so that they became united.

*Microscopical Preparations of certain "Nerve Endings in the Auditory Tract."*

PROFESSOR COFFEY demonstrated the three typical forms of endings of the cochlear nerve in the *pons cerebri*, calyces, tree-root endings and encapsuling fibres. The specimens were stained after the manner of Cajal, of Madrid, and Wehl, of Leipzig.

PROFESSOR FRASER did not think the dark staining satisfactory. One never felt certain that he was looking at nerve fibre, as the finer vessels simulated fibres. He preferred copper staining; it gave a clearer, better view of the fibres, but it did not keep for more than forty-eight hours. The splitting of the fibres into ascending and descending fibres he had recognised and demonstrated as far back as 1886.

PROFESSOR CUNNINGHAM feared that few of them had worked much on nerve endings, and he congratulated Professor Coffey on his excellent paper and beautiful exhibits.

*Stomach Chamber.*

PROFESSOR BIRMINGHAM said that about two years ago, in a paper contributed to the *Journal of Anatomy*, he introduced the terms "stomach chamber" and "stomach bed." For these he had to encounter a good deal of quizzing, but he thought the terms helpful and stuck to them. It was his object to make plain to the Section that there is a "stomach chamber" and a "stomach bed;" for this purpose he brought a specimen hardened *in situ* by formalin and gelatin. The anterior abdominal wall having been removed, the stomach, which was distended and hardened, and had been cut free at both extremities, was lifted out, showing a distinct chamber, bounded superiorly by the diaphragm, and inferiorly by the small intestines, pancreas, upper extremity of

the kidney, and transverse mesocolon. This chamber the viscus fills when distended; when in a condition of contraction a portion of the colon presses up in front of the viscus into the chamber. In the healthy male adult he finds that the stomach projects downwards, at an angle of  $45^{\circ}$ , inwards and forwards. When distended its pyloric extremity tilts upwards, and its oesophageal opening is not directly on its lesser curvature, but opens on the anterior surface. Tight lacing displaces the viscus and alters its relations. A contracted stomach may easily be mistaken for a portion of intestine.

PROFESSOR SYMINGTON quite agreed with Professor Birmingham that the stomach projects forward and downward, and that it does not in the adult hang vertically, as might be seen from his article on the stomach in "Quain's Anatomy." But he cannot see any advantage in the term "stomach bed" or "stomach chamber." He heartily congratulated Professor Birmingham on his demonstration.

PROFESSOR CUNNINGHAM agreed with Professor Birmingham that the titles "stomach bed" and "stomach chamber" were useful and helpful. The transverse mesocolon does divide the abdominal cavity into a gastric and an intestinal region.

*The Abdominal and Pelvic Viscera in a Case of Advanced Pregnancy.*

DR. T. G. MOORHEAD said—The specimen was hardened *in situ* by the formalin process and photographed. The subject had reached the seventh month of pregnancy, and it was, probably, the first occasion of such a specimen being photographed for exhibition. The uterus extended well up into the abdomen and inclined to the right side; the left ovary came in contact with the anterior abdominal wall. The uterus was also rotated on its long axis, which brought the right ovary into contact with the cæcum. The upper margin of the uterus lies at a point two inches above the symphysis pubis, and is overlapped by the transverse colon and great omentum.

PROFESSORS CUNNINGHAM, SYMINGTON, FRASER, and BIRMINGHAM congratulated Dr. Moorhead on his unique and splendid specimen, and the excellence of his paper, which left nothing to be added to its fulness.

*Exhibit.*

PROFESSOR FRASER exhibited the abdominal cavity of a female subject between fifty and sixty years of age, obtained in the dissect-

ing room, in which the descending limb of the early umbilical loop had neither turned to the left nor adhered to the posterior abdominal wall. The colic or ascending limb, however, turned to the right, passing across the front of the second portion of the duodenum and to its usual position in the right iliac fossa, and had adhered to the posterior abdominal wall along its whole length in the usual manner. This condition resulted in the duodenum lying wholly to the right side, and being formed by only its first or ascending and its second or descending portion, the transverse and terminal ascending as well as the duodeno-jejunal flexure being absent. The coils of the jejunum lay to the right and behind the mesenteron commune, being in this way concealed from view on turning up the first omentum and transverse colon. The coils of the ileum lay to the left and in the pelvic cavity. On turning the coils of the ileum upward, the finger could be placed on the origin of the superior mesenteric artery from the aorta, which ran freely out in the mesenteron commune.

The Section then adjourned.

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#### SECTION OF PATHOLOGY.

President—E. J. MCWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

*Friday, February 21, 1902.*

THE PRESIDENT in the Chair.

*Smith's Fracture of the Radius.*

PROFESSOR E. H. BENNETT presented a cast and skiagraph of an example of fracture of the lower end of the radius with displacement of the lower fragment forwards (reversed Colles' fracture, Smith's fracture).

*Impacted Intracapsular Fracture of Neck of Femur.*

PROFESSOR E. H. BENNETT also recorded the history of a case of impacted intracapsular fracture of the neck of the thigh-bone. [Professor Bennett's paper is published in this number of the Journal, at page 241.]

DR. KNOTT observed that the Irish School of Surgery had now registered another of the many landmarks of the advance of osseous pathology, which had been laid during a long series of years by Mr. Robert Adams, Professor R. W. Smith, and his successor.



Professor E. H. Bennett. The fracture, which derived its name from the great Dublin surgeon, had received its best and most apt illustrations from the author of the present communication. With regard to the fracture of the neck of the femur, Dr. Knott congratulated Professor Bennett on having secured a skiagram of impacted fracture of the neck. He would like to ask what was Dr. Bennett's explanation of the universal rule of non-union in cases of non-impacted intracapsular fracture of the femur. The direction of impaction in this case agreed with Professor R. W. Smith's rule that the neck always penetrated the other fragment.

PROFESSOR BENNETT, in reply to Dr. Knott's query, said he thought all surgeons were now agreed that the non-union of non-impacted intracapsular fractures was due to want of contact of the fragments and want of rest of the part. In all the specimens he had seen the lower fragment was impacted in the upper.

*Cultivation of the Tubercle Bacillus on Loeffler's Serum direct from the Human Subject.*

THE PRESIDENT demonstrated a case of tubercular pleuro-pericarditis in which the bacilli were unusually numerous, so that cultures made direct on Loeffler's serum gave abundant growths. He exhibited these primary cultures, showing the lichenoid appearance of the colonies, and their characteristic tendency to grow on the glass. Secondary cultures on glycerinated potato were also shown. They were most luxuriant, of a light reddish hue, and the bacilli formed a corrupted scum on the dilute glycerine below the constriction in the tube. He also exhibited tertiary cultures on glycerine agar, which were succeeding well. On this medium the colonies were whitish. The case was one of much interest. Patient, a male, aged fifty-five, had a left tubercular pleurisy. In the right lung were nodules of tubercular broncho-pneumonia, but the pleura was free. The superior pericardial glands were tubercular, and the parietal layer of the pericardium was much thickened and infiltrated with caseous matter. The visceral layer was normal, save for a single spot on the anterior surface of the heart, where a slight roughness indicated that the process had begun to extend to it, owing to friction with the parietal layer. The spleen was much enlarged, so as to form a tumour readily palpable during life. It was studded with yellowish necrotic masses larger than miliary tubercles, and containing tubercle bacilli in large numbers. The kidneys and liver were likewise

studded with minute necrotic foci, entirely devoid of giant or epithelioid cells, but remarkably rich in tubercle bacilli. Sections of these were shown, and the speaker pointed out that this was an example of the inverse ratio so often remarked between the number of the bacilli and the typicity of the tubercular structure. In the affected parts of the pericardium the bacilli formed masses large enough to be seen with the low power in the stained preparation. The affection of the spleen, kidneys, and liver was doubtless to be regarded as the result of a terminal inundation of the blood stream. There were appearances on the *intima* of the aortic arch, where the tubercular pericardial glands were adherent to it, that seemed to indicate that the rupture might have taken place into that vessel. But as yet he had not proved this microscopically. He concluded by adverting to the frequency of this form of pericarditis, which was pointed out by Osler, and stated that since his attention had been called to the matter he had found it very frequently in the *post-mortem* room.

*Colloid Cancer of the Cæcum.*

THE PRESIDENT also showed a specimen of colloid cancer of the cæcum that had occurred in an elderly woman.

*A Case of Congenital Hydronephrosis.*

DR. RAMBAUT submitted, through the SECRETARY, the following case:—The male patient, from whom I removed *post-mortem* the hydronephrotic kidney which I exhibit, died on Jan. 8th, 1902. The cause of death was pulmonary phthisis. He had shown no symptoms or signs of kidney disease, and his urine was free from albumen. The right kidney, which showed the hydronephrotic change, appeared a little larger than the left. Its capsule was non-adherent, and its cortex appeared normal. Much absorption of the pyramids has taken place. The ureter was not dilated. The left kidney, the bladder, the prostate, and the urethra appeared normal. Beneath the commencement of the right ureter there was a pouch of the pelvis, of the size shown in a rough pencil drawing. The urine in this pouch probably exerted at first a pressure in the commencement of the ureter, which caused an obstruction to the flow of urine into the ureter. As the tension in the pelvis increased, this obstruction was removed, and a flow of urine took place. In this manner it is possible to understand how an intermittent flow may have occurred. Perhaps this condition should

be more accurately defined as one of congenital hydronephrosis, which is due to malformation of the upper end of the ureter or the junction of the pelvis and ureter. Very rarely at the point of union of the ureter with the pelvis a kinking of the ureter occurs which causes an incomplete or intermittent obstruction. Intermittent obstruction is necessary for the development of hydronephrosis, for, should the obstruction be complete, the tension within the calyces will prevent the secretion of urine. Orth, in his "Pathological Anatomy," treating of hydronephrosis, says—"There is a congenital valvular formation in the ureters themselves, and likewise an abnormal valvular oblique insertion of the ureters into the pelvis, which may become closed with a pouch of mucous membrane. In such cases generally the ureter is not inserted in the usual position in the pelvis, but higher up, so that an emptying of the pelvis in the erect posture can be established only when the pelvis is filled above the orifice of the ureter" (Orth, "Lehrbuch der speciellen pathologischen Anatomie," II. Band). I should mention that there was no abnormality in the position of the renal artery, and the kidney was in no way a movable kidney.

THE PRESIDENT, from the appearance of the specimen exhibited, said he would be slow to describe the case as one of pure hydronephrosis. To him it appeared to be a case of dilatation of the pelvis and calyces of the kidney, rather than one of hydronephrosis.

#### *Huge Abdominal Cyst.*

DR. W. J. THOMPSON presented the following case:—E. B., mechanical engineer, for some time working at Woolwich Arsenal, aged thirty-six, unmarried, was admitted to Jervis-street Hospital on October 9th, 1901, with the following history:—In April, 1899, while at particularly heavy work, he felt that he strained himself about the region of the stomach, and from that time he always felt uncomfortable about the upper part of the abdomen. In the following July he got an acute attack of English cholera, and was obliged to stay away from work for some days. From that period he was frequently subject to attacks of pain in the upper part of the abdomen, accompanied with vomiting, but no diarrhoea. These became so frequent and severe that he had, in the Spring of 1900, to give up work. About this time he attended, as an out-patient, one of the London hospitals for what he himself described as dyspepsia. In May, 1900, he first noticed

a swelling in the region of the liver, and this gradually increased until it attained its present size. From the commencement of the swelling he had no pain—only a tight feeling—but the vomiting continued. He had a good family history; had himself always been strong and healthy; was 5 ft. 8 in. high, and before his illness weighed about twelve stone. He was temperate and regular in his habits, and denied ever having had syphilis or gonorrhœa. On admission he was found to be thin and emaciated, weighing ten stone. The upper part of the abdomen was greatly distended in the right hypochondrium, the epigastrium, and part of the left hypochondrium, the right lumbar and umbilical regions, the point of most prominence being at the junction of the 8th costal cartilage on the right side—the costal cartilage was everted at this point. There was well-marked bulging in the right flank and back, even when the patient was placed in the prone position. The swelling was absolutely dull on percussion, and fluctuation was with difficulty obtained. The face borders could easily be defined in the left hypochondrium, left lumbar and inguinal regions. The following measurements were recorded:—Circumference at level of junction of 8th costal cartilage, 39 inches; at umbilicus, 38 inches; distance of top of ensiform cartilage from umbilicus, 8 inches; distance of umbilicus from pubes,  $6\frac{1}{2}$  inches. The urine was found to be normal in quality and quantity. No change in the blood could be detected under the microscope; he was not jaundiced; had not fatty stools; temperature was normal; heart and lungs were sound; respirations quickened and shallow, due to the pressure. The vomited matter was ordinary gastric, sometimes mixed with matter of biliary origin; but at no time did he vomit more than what he consumed. For the first two weeks after admission he seemed to improve, and put on 5 lbs in  $\frac{1}{2}$  weight; was able to take and retain more nourishment and to be up and about. After that time he gradually got worse, the vomiting became more persistent, so much so that he had to be fed by nutrient enemata. He lost flesh rapidly, and shortly before his death, which took place on December 13, he weighed only 8 stone 4 lbs. During the latter part of his illness the cyst became movable, and could easily be displaced from one side to the other. He was frequently urged to allow an operation, but would never consent. It seems from cases recorded that operations are frequently successful. Osler, in his recent work on abdominal tumours, describes a case with history and symptoms

almost similar to this one. His case was operated on, and made a good recovery. The contents of the cysts evacuated were found to be a dark, coffee-coloured fluid, containing granular debris and much altered blood with some fresh red blood-corpuscles. The diagnosis arrived at was that it was a huge cyst, and that it was either in connection with the pancreas or the omentum, or that it was situated in the lesser sac of the peritoneum; the first view, that connecting the cyst with the pancreas, being the more likely. The origin of such cysts is rather obscure; as usual, different authors put forward different theories. It is now generally held that they are of traumatic origin, and that they first commence as blood cysts. As far back as 1892 Mr. Jordan Lloyd, in a paper published in the *British Medical Journal*, suggested that such cases were the result of contusions or traumatism in the upper part of the abdomen, and that this might be attached either to the pancreas or to the omentum, or to the lesser sac of the peritoneum. With this view Osler and other prominent writers agree. At the *post-mortem* examination, on opening the abdomen, there were a great number of adhesions, but no ascitic fluid. The cyst was very movable, and the stomach was stretched out and adherent to the anterior surface. The pancreas and descending aorta are embedded in its walls. Its circumference measured 32 inches. All the other abdominal organs seemed healthy, and there were no enlarged glands.

THE PRESIDENT said that this extremely interesting cyst was preserved unopened on his (Dr. E. J. McWeeney's) advice. It is a good illustration of the rapid growth to an enormous size to which pancreatic tumours, or tumours connected with the pancreas, may attain. Some time ago he exhibited to the Section a tumour which, before removal, he considered to be of pancreatic origin, but on dissecting it out he found that, although the pancreas was attached to, and might be said to form a part of, its posterior wall, it was a hæmatoma of the lesser peritoneal cavity, with walls, such as one found in large aneurysms, of organised blood-clot.

SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.

Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

*Friday, March 14, 1902.*

DR. ANDREW HORNE in the Chair.

*Exhibits.*

THE HON. SECRETARY exhibited for DR. GLENN an uterus removed by retro-peritoneal hysterectomy, showing peculiar venous attachments.

DR. ALFRED SMITH exhibited three fibromatous uteri, showing mucoid degeneration.

DR. PUREFOY exhibited a fibroid uterus and a specimen of ruptured tubal pregnancy.

DR. HORNE exhibited a specimen of a large uterine polypus.

DR. PUREFOY read the "Report of the Rotunda Hospitals for the year 1900-1901." [It will be found at page 248.]

It was decided to postpone the discussion until the next meeting of the Section.

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HOMES FOR COUNTRY GIRLS GOING TO LONDON.

THE continual influx of country girls into London makes it more than ever imperative that they should be made acquainted with the home-life accommodation provided for them. We have been requested to state that any girl or young woman, between the ages of sixteen and twenty-five, able to substantiate her respectability, can find such accommodation at the following houses:—Victoria House, 135 and 137 Queen's-road, Bayswater, W.; Morley House, 14 Fitzroy-street, Fitzroy-square, W.; Gordon House, 8 Endsleigh-gardens, N.W.; Woodford House, 28 and 29 Duncan-terrace, Islington, N.; Garfield House, 8 Fitzroy-square, W.; Hyde House, 27 Somerset-street, Portman-square, W.; Lincoln House, 12 York-place, Baker-street, W.; Domgay House, 11 Fitzroy-street, Fitzroy-square, W. The cost for board and lodging is from seven to eight shillings and sixpence per week, and each house has a commodious sitting-room, which is supplied with library, magazines, &c. All applications for admission must be made to the superintendents of the respective houses.

## CLINICAL RECORDS.

*Case of Tumour of the Superior Maxilla.* By CHAS. F. FORSHAW, LL.D., F.R.S.L.; Doctor of Dental Surgery of the Baltimore College of Dental Surgery; and Honorary Dental Surgeon to the Bradford Orphanage for Boys, the Bradford Women's Home and Shelter, and the Bradford Deaf and Dumb Institution; Member of the Royal Dublin Society.

Miss B. D., aged twenty-seven, a lady of healthy appearance, came to me some twelve months ago to ask my advice as to what should be done with respect to a swelling on the left upper jaw, which was about the size of a pigeon's egg, and which had first made its appearance some twelve months prior to her visit to me. The tumour gave to her face an ugly asymmetry. Its situation upon the jaw was eight lines from the alveolar margin. It was rather lobulated, sessile, and conveyed to the finger a sense of slight pulsation. Its origin could not be directly traced to the periodontal membrane lining the alveolus in connection with any decayed teeth. In general appearance the body suggested gumma, epulis of an unusual form, or epithelioma. She had been treated with potassium iodide without benefit, and there was no history or symptoms pointing to a specific origin. There were no glandular enlargements at the angle of the jaw or about the triangles of the neck. The growth appeared to spring from the labial surface of the alveolar process. Its growth had been very rapid for the last three months, and was quite unaccompanied by any form of ulceration, nor was there any pain.

Miss D. had worn a partial upper vulcanite denture for some years, which was displaced so much as to show some of the natural teeth in both the superior and inferior maxillæ, owing to her being unable to quite close the mouth on account of the protuberance of the tumour. In January of last year (1901), the patient having been prepared, chloroform was administered by means of Junkel's inhaler, Mason's gag inserted in the mouth, the cheek retracted, and, everything being in absolute readiness, Mr. Percy Lodge, F.R.C.S.I., with my assistance, removed the growth with one sweep of the knife. There was much hæmorrhage, one or two vessels having to be picked up by catch forceps and tied. The actual cautery (the circular flat button) was now freely applied to the base of the

ulcer so produced. This process was pushed, so as to destroy the tissues, right down to the bone, some of which was gouged away and removed. The wound was plugged with iodoform gauze, and the patient was allowed to recover from the anæsthetic, after having been under its influence less than a quarter of an hour. The total quantity of chloroform used was one drachm. In seven days the lady's face had resumed its normal appearance. She was much brighter, and had even increased in weight. We also, at the same time, excised the edge of the scar where the alveolar process adjoined the buccal mucous membrane, which had a slightly suspicious feel of rigidity, the portion removed being about three-quarters of an inch by an eighth of an inch in breadth. I saw her again the following week, and on this occasion the healed surfaces had quite a healthy appearance. There has been no return of the condition up to the present—March 21st, 1902, when I last saw her. On examination, the tissue removed in the recent state had a fibrous appearance, containing numerous vessels, some of which were of large size. It presented, microscopically, many thin-walled blood-channels, lying in a stroma of small spindle-shaped cells, among which could be discerned a few of a myeloid type, certainly suggestive of mild sarcomatous malignancy.

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*Encephalocele.* By EDGAR DU CANE, B.A., M.B., R.U.I.

*History.*—An infant ( $3\frac{1}{2}$  days) was brought to me by the midwife with a tumour in the occipital region for operative treatment. The mother, aged thirty-five, has had five healthy children, at full term, one still-born (cause unknown), and, after an interval of ten years, the present child. No particular difficulty appears to have occurred during labour, and, apart from the tumour, the child appears well nourished and born at full term.

*Present Condition.*—The tumour is two-thirds the size of the child's head, globular in shape, connected with the occipital region by a large, circular peduncle covered with hair. The skin at the posterior surface was much thinner than elsewhere. Pulsation occurs when the child cries; and besides the presence of fluid, evidenced by fluctuation, there are some solid contents. The connection with the cranial cavity seems to be between the centres of ossification of the occiput. I diagnosticated the case as a meningo-encephalocele, and having explained to the parents the probability of a fatal termination, whether operated on or left alone, proceeded, at their request, to remove the tumour.



*Operation.*—Having rendered the parts thoroughly aseptic, I aspirated about four ounces of a sanguineous fluid, then dissecting the skin back from the membranes, I separated each layer of membranes after the manner of operating on a strangulated hernia, finally coming upon the posterior portions of both occipital lobes; and, as these could not be returned into the cranial cavity, I carefully sliced off the protruding portions, which on examination proved to be well behind the angular gyrus. Bleeding vessels were tied or twisted, the membranes were removed and the edges stitched together, the skin sutured, and a firm pad of antiseptic gauze applied. The child cried, took the breast, passed water and defæcated naturally; the wound healed rapidly without supuration, and only on the third day did the temperature rise above 100° F., falling again the same night. After fourteen days, the child, then presenting every appearance of a favourable termination, had a convulsion, and finally died from convulsions sixteen days after the operation.

The *post-mortem* examination showed almost complete cicatrization of the cerebral lesion, but the brain was adherent to the membranes, and the latter to the operation-wound. There was no pus, and but little fluid in the cranial cavity, nor was there any extensive congestion apart from that due to the cicatrization.

*Remarks.*—My reasons for operating were as follow :—

1. The disease if left alone is usually speedily fatal (Erichsen. Ninth Edition. Vol. II. P. 556).

2. Dr. G. A. Wright (Manchester) says that "Attempts have been made to excise the tumours with sufficient success to encourage further trials in selected cases" (Ashby & Wright: *Diseases of Children*. Fourth Edition. P. 571).

3. Ferrier states that "though the occipital lobes are included in the visual centres, it is nevertheless a remarkable fact that they can be injured or cut off, bodily almost up to the parieto-occipital fissure, on one or both sides simultaneously, without the slightest appreciable impairment of vision" (*Functions of the Brain*. Second Edition. P. 273); and further adds that "Horsley and Schäfer inform him that the results of removal of the occipital lobes, in their experiments, entirely harmonise with his, as to the completely negative effect of this operation on the animal's visual and other faculties" (*Op. cit.* P. 276).

Schatz records a cure in three cases, by constricting the peduncle

with clamps (*Berliner klinische Wochenschrift*. 1885. No. 28. P. 371).

Dr. G. A. Wright excised an occipital meningo-encephalocele in which a piece of the cerebellum of the size of a walnut was removed; the child recovered, though it developed hydrocephalus after the operation (*Op. cit.* P. 572).

Erichsen mentions a case in which a portion of the brain (whether cerebrum or cerebellum is not stated) was sliced off, the patient surviving; but he gives no further reference or record of the case (*Op. cit.* P. 556).

Mr. Jessop (Leeds) records a successful case of excision, but there was no protrusion of either cerebrum or cerebellum, and no distinct communication with the cranial cavity (*British Med. Journ.*, Dec. 30, 1882).

Annandale, in a case where sloughing of a portion of the tumour was taking place, ligatured the peduncle, and removed the tumour; the child recovering completely in spite of an attack of measles (Erichsen. Vol. II. P. 556).

Dr. Wright, in a private communication to me, says that "so far as he remembers, the other cases he has operated upon have all been meningoceles only."

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#### MEASLES BEFORE THE AGE OF SIX MONTHS.

At a meeting of the Harvard Medical Society of New York City, held on January 25, 1902, Dr. Edward M. Foote said he had recently consulted a prominent specialist with regard to measles in children, and had been told that the disease practically never occurs before the age of six months. He asked for the experience of others with regard to the occurrence of the disease in early infancy. Dr. Bryant said that in his connection with the Hospital for Contagious Diseases he had seen a number of cases of measles in children under six months of age. Besides this he has seen a number of relapses of the disease and thinks that measles provides the least protection against a second attack of any of the infectious diseases of childhood. In one case Dr. Bryant had seen five relapses of measles, after each of which the patient was free from rash for at least one week before the new crop of measles lesions appeared. He has also seen patients suffer successively two and three attacks of the disease.—*Medical News*, March 8, 1902.

# SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D., Univ. Dubl.;  
F.R.C.P.I.; F.R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl. ;

## VITAL STATISTICS.

*For four weeks ending Saturday, February 22, 1902.*

## IRELAND.

### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending February 22, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 30·2 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, February 22, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Feb. 1	Feb. 8	Feb. 15	Feb. 22			Feb. 1	Feb. 8	Feb. 15	Feb. 22	
22 Town Districts	20·0	22·1	25·9	30·2	24·6	Lisburn -	18·2	36·4	18·2	22·8	23·9
Armagh -	6·9	13·8	34·4	27·6	20·7	Londonderry	11·5	25·6	20·5	29·4	21·8
Ballymena	14·4	9·6	43·1	24·0	22·8	Lurgan -	17·7	31·0	31·0	39·8	29·9
Belfast -	18·9	17·9	24·6	29·8	22·8	Newry -	37·3	16·6	20·7	20·7	23·8
Clonmel -	25·5	30·6	40·9	40·9	34·5	Newtownards	11·4	40·1	22·9	45·8	30·1
Cork -	26·1	26·8	36·4	30·9	30·1	Portadown	10·4	15·6	36·3	20·3	20·8
Drogheda -	20·4	53·1	4·1	20·4	24·5	Queenstown	13·2	38·1	39·7	26·4	28·1
Dublin - (Reg. Area)	22·7	23·8	25·7	33·3	26·4	Sligo -	24·0	0·0	4·8	33·6	15·6
Dundalk -	8·0	12·0	27·9	12·0	15·0	Tralee -	5·3	26·6	53·1	15·9	25·2
Galway -	38·9	19·4	46·6	46·6	37·9	Waterford	13·6	13·6	13·6	19·5	15·1
Kilkenny -	5·0	9·9	14·9	9·9	9·9	Wexford -	14·0	28·4	18·7	23·4	19·9
Limerick -	18·7	31·5	23·3	26·0	23·6						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, February 22, were equal to an annual rate of 1·5 per 1,000—the rates varying from 0·0 in fifteen of the districts to 6·6 in Queenstown. Among the 205 deaths from all causes registered in Belfast are 2 from measles, 4 from whooping-cough, one from diphtheria, 4 from enteric fever, and 4 from diarrhoea. The 45 deaths in Cork include one from whooping-cough.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 93,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, February 22, amounted to 248—125 boys and 123 girls; and the deaths also to 248—109 males and 139 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 34·1 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 33·3 per 1,000. The deaths registered in the week ended Saturday, February 22, include 16 deaths which occurred in the South Dublin Union Workhouse before Saturday, February 15. During the eight weeks ending with Saturday, February 22, the death-rate averaged 26·5, and was 5·4 below the mean rate for the corresponding portions of the ten years, 1892–1901.

Sixteen deaths from zymotic diseases were registered during the week under discussion. This number is equal to a rate of 2·2 per 1,000 of the estimated population, the average rate for the corresponding period of the past 10 years being 3·6 per 1,000. Four deaths were caused by influenza; measles and enteric fever each caused 3 deaths; whooping-cough and diarrhoea each caused 2 deaths. There was one death from diphtheria and one death from septicæmia.

Tuberculosis was the cause of 32 deaths, including 27 from pulmonary tuberculosis; from tubercular meningitis and tuber-

cular peritonitis one death each. There were, moreover, 3 deaths from other forms of the disease.

Diseases of the respiratory system were the cause of 82 deaths. Of these 56 were due to bronchitis and 22 to pneumonia; 4 deaths were caused by other diseases of the respiratory system. The above total is equal to a rate of 11·3 per 1,000 of the estimated population, the average rate for the corresponding period of the past 10 years being 8·7 per 1,000.

Cancer caused 11 deaths. Eleven deaths were registered as being caused by convulsions—of these 4 were of infants under one month, 5 were of children between the ages of one month and one year, and 2 were of children over one year but under 5 years of age.

There were 4 deaths from apoplexy, and 11 from other diseases of the brain and nervous system (exclusive of convulsions). Diseases of the circulatory system caused 22 deaths.

There were 7 accidental deaths; of these 3 were caused by burns or scalds, and one by vehicles and horses.

In 8 instances the cause of death was “uncertified,” there having been no medical attendant during the last illness; these cases comprise the deaths of 3 children under 5 years of age (including 2 infants under one year old) and the deaths of 3 persons aged 60 years and upwards.

Sixty of the persons whose deaths were registered during the week were under 5 years of age (40 being infants under one year, of whom 11 were under one month old), and 80 were aged 60 years and upwards, including 32 persons aged 70 and upwards, of whom 8 were octogenarians, and 2 (a man and a woman) were stated to have been aged 94 years each.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under “The Infectious Diseases (Notification) Act, 1889,” as follows:—

Week ending February 1, 1902 ..	..	53 cases.
„ February 8, „ ..	..	51 cases.
„ February 15, „ ..	..	94 cases.
„ February 22, „ ..	..	68 cases.

Of the 108 cases notified in the week ended February 22, 14

were erysipelas, 17 enteric fever, 9 scarlatina, 4 diphtheria, 15 measles, 3 continued fever, and 46 chicken-pox.

(2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending February 1, 1902 .. ..	2 cases.
„ February 8, „ .. ..	3 cases.
„ February 15, „ .. ..	5 cases.
„ February 22, „ .. ..	3 cases.

Of the 3 cases notified in the last week, one was enteric fever, one erysipelas, and one "undefined" fever.

(3.) CASES OF INFECTIOUS DISEASES IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending February 1, 1902 .. ..	66 cases.
„ February 8, „ .. ..	30 cases.
„ February 15, „ .. ..	39 cases.
„ February 22, „ .. ..	12 cases.

Of the 12 cases notified in the last week, one was diphtheria, 9 were measles, and 2 whooping-cough.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Three cases of small-pox which had been admitted to hospital in the week ended February 15, remained under treatment at the close of the week ended February 22.

One case of enteric fever was admitted to hospital, 8 cases were discharged, and 51 cases remained under treatment at the close of the week.

Eleven cases of scarlatina were admitted to hospital, 19 cases were discharged, there was one death, and 88 cases remained under treatment at the close of the week.

One case of typhus fever was discharged from hospital, leaving 3 under treatment at the close of the week.

Three cases of diphtheria were admitted to hospital, 8 cases were discharged, there was one death, and 35 cases remained under treatment at the close of the week.

In addition to the above-named zymotic diseases recognised as such, 12 cases of pneumonia were admitted to hospital, 6 patients were discharged, there were 2 deaths, and 24 cases remained under treatment at the end of the week.

#### STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending February 1, 1902 .. ..	44 cases.
„ February 8, „ .. ..	34 cases.
„ February 15, „ .. ..	39 cases.
„ February 22, „ .. ..	33 cases.

Of the 33 cases notified in the week ended February 22, 7 were enteric fever, 4 erysipelas, 4 diphtheria, 8 continued fever, and 9 scarlet fever.

#### ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, February 22, in 75 large English towns, including London (in which the rate was 29·3), was equal to an average annual death-rate of 24·4 per 1,000 persons living. The average rate for 8 principal towns of Scotland was 25·3 per 1,000, the rate for Glasgow being 25·9, and that for Edinburgh 22·1.

#### METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1902.*

Mean Height of Barometer, - - -	29·815 inches.
Maximal Height of Barometer (1st. at 9 a.m.),	30·825 „
Minimal Height of Barometer (26th, at 11 p.m.),	28·950 „
Mean Dry-bulb Temperature, - - -	38·2°.
Mean Wet-bulb Temperature, - - -	36·5°.
Mean Dew-point Temperature, - - -	33·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·200 inch.
Mean Humidity, - - - -	85·3 per cent.
Highest Temperature in Shade (on 28th),	54·4°.
Lowest Temperature in Shade (on 12th),	22·0°.
Lowest Temperature on Grass (Radiation) (12th)	20·0°.
Mean Amount of Cloud, - - -	62·4 per cent.
Rainfall (on 10 days), - - -	1·748 inches.
Greatest Daily Rainfall (on 26th),	·918 inch.
General Directions of Wind, - - -	S.S.E., W.

*Remarks.*

For the third time in succession February proved a cold month and distinctly colder than January. On this occasion the mean temperature of the air in Dublin was as much as  $4.2^{\circ}$  below that of January. The "cold snap" which set in on January 24 lasted in Ireland until the 21st, but in England until the 26th. Consequent on a violent snowstorm in Ulster on the 7th, temperature became unusually and persistently low. The area of most intense cold was found in the County Tyrone, for at Edenfel, Omagh, the mean temperature of the week ended Saturday, February 15, was only  $22.1^{\circ}$ , or  $16.9^{\circ}$  below the average. At that station the actual minimum in the screen was  $4^{\circ}$  on the early morning of Friday, the 14th. Even lower readings were reported from Scotland—namely, zero from Braemar, and minus 2 from Lairg, in Sutherlandshire. On and after the 15th a mild southerly air-current was in conflict with the cold air lying over Western Europe, and about the 21st the temperature rose above the average in Ireland, so continuing to the end of the month. Had it not been for this warm spell, February, 1902, would have been exceptionally cold. Even in Dublin the mean temperature of the week ended the 15th was as low as  $31.4^{\circ}$ ; the mean dry-bulb readings at 9 a.m. and 9 p.m. being only  $29.3^{\circ}$ . The duration of bright sunshine was estimated at  $79\frac{1}{2}$  hours, or a daily average of 2.8 hours.

In Dublin the mean temperature ( $39.3^{\circ}$ ) was  $3.5^{\circ}$  below the average ( $42.8^{\circ}$ ). The mean dry-bulb readings at 9 a.m. and 9 p.m. were  $38.2^{\circ}$ . In the thirty-seven years ending with 1901, February was coldest in 1895 (M. T. =  $34.2^{\circ}$ ), and warmest in 1869 (M. T. =  $46.7^{\circ}$ ). In 1900 the M. T. was  $37.9^{\circ}$ ; in 1901 it was  $39.2^{\circ}$ .

The mean height of the barometer was  $29.815$  inches, or  $0.040$  inch below the average value for February—namely,  $29.855$  inches. The mercury was as high as  $30.825$  inches at 9 a.m. of the 1st, and fell to  $28.950$  inches at 11 p.m. of the 26th. The observed range of atmospheric pressure was, therefore,  $1.875$  inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was  $38.2^{\circ}$ , or no less than  $4.2^{\circ}$  below the value for January, 1902. Using the formula,  $\text{Mean Temp.} = \text{Min.} + (\text{Max.} - \text{Min.} \times .50)$ , the M. T. is  $39.3^{\circ}$ , compared with a twenty-five (1865–1889) years' average of  $42.8^{\circ}$ . On the 28th the thermometer in the screen rose to  $54.4^{\circ}$ —wind, S.W.; on the 12th the temperature fell to  $22.0^{\circ}$ —wind, W.N.W. The minimum on the grass was  $20.0^{\circ}$ , also on the 12th.



The rainfall was 1·748 inches, distributed over 10 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was 2·150 inches, and the average number of rainy days was 17·2. The rainfall, therefore, and particularly the rainy days were much below the average. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879 also 3·706 inches fell on 23 days. On the other hand, in 1891, only ·042 inch was measured on but 2 days.

The atmosphere was foggy on 10 days—the 4th, 5th, 6th, 7th, 8th, 10th, 13th, 15th, 17th, and 18th. The amount of cloud—62·4 per cent.—was below the average—66 per cent. High winds were noted on 6 days, and reached the force of a gale on the 1st, 2nd, and 26th. Hail fell on the 8th. Snow or sleet fell on the 7th and 8th. A lunar halo was seen on the 15th. There was a fine lunar rainbow shortly after 9 p.m. of the 23rd.

The temperature reached or exceeded 50° in the screen on five days, and it fell below 32° on 10 nights, compared with as many as 18 nights in 1895, only one night in 1896, 7 nights in 1898, 4 nights in 1899, 12 nights in 1900, and 9 nights in 1901. The minima on the grass were 32° or less on 11 nights, compared with every night in 1895, 21 nights in 1900, and 17 in 1901. The thermometer failed to rise to 40° in the screen on 7 days. On the 11th the maximum was only 32·8°.

In Dublin the rainfall up to February 28th, 1902, amounted to 3·362 inches on 22 days, compared with 3·872 inches on 29 days in 1901, 5·735 inches on 50 days in 1900, 4·651 inches on 39 days in 1899, only ·714 inch on 16 days in 1891, and a twenty-five years' (1865–1889) average of 4·350 inches on 34·5 days.

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At Knockdolian, Greystones, Co. Wicklow, 2·590 inches of rain fell on 8 days. The heaviest fall in 24 hours was ·635 inch on the 26th. In February, 1900, the fall was 6·670 inches on 20 days; in 1901, 1·385 inches on 11 days. The total fall to February 28th, 1902, inclusive, was 4·450 inches on only 17 days, compared with 5·420 inches on 27 days in 1901, 10·436 inches on 44 days in 1900, 8·610 inches on 42 days in 1899, 3·980 inches on 29 days in 1898, 5·190 inches on 37 days in 1897, and only 1·940 inches on but 17 days in 1896.

The rainfall at Cloneevin, Killiney, Co. Dublin, amounted to 2·35 inches on 12 days. Snow fell on the 8th and 13th. The average rainfall for February during 17 years (1885–1901) at this station is 1·754 inches on 13·8 days. The greatest rainfall

in 24 hours was .63 inch on the 26th. Since January 1 the rainfall was 3.97 inches on 24 days, compared with 4.39 inches on 28 days in 1901, 7.23 inches on 48 days in 1900, 6.28 inches on 36 days in 1899, 3.32 inches on 29 days in 1898, 4.31 inches on 38 days in 1897, and 1.64 inches on 19 days in 1896.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 3.196 inches on 12 days, compared with only 1.748 inches on 11 days in February, 1901, and 3.786 inches on 17 days in February, 1900. The maximal fall in 24 hours was .552 inch on the 21st. The month was generally fine at Recess, with severe frost from the 8th to the 14th. Glendalough was frozen, the ice being  $1\frac{1}{2}$  inches thick.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell on 11 days to the amount of 2.76 inches, the greatest daily fall being 1.38 inches on the 26th. In February, 1901, the rainfall was 1.55 inches on 10 days. The temperature in the shade ranged from 22° on the 12th to 52° on the 28th. The mean temperature in the screen was 39.0°.

From Dr. B. H. Steede we learn that the rainfall at the National Hospital for Consumption, Newcastle, Co. Wicklow, was 2.923 inches on 10 days, compared with 5.929 inches on 20 days in February, 1900, and 1.296 inches on 11 days in 1901. The maximal fall in 24 hours was .576 inch on the 22nd, but .556 inch also fell on the 26th, and .510 inch on the 23rd. Up to February 28th, the rainfall at Newcastle amounted to 4.589 inches on 22 days, compared with 4.837 inches on 25 days in the corresponding period of 1901. At this Second Order Station the screened thermometers fell to 25.4° on the 12th, and rose to 53.0° on the 28th.

Dr. J. Byrne Power, D.P.H., Medical Superintendent Officer of Health for Kingstown, Co. Dublin, writes: The mean temperature at Kingstown for the month of February was 39.3°, the extremes being—highest, 56.0°; lowest, 22.5°. At Bournemouth the mean was 36.2°, the extremes being—highest 50°; lowest, 23°. The mean daily range was 8.1° at Kingstown, and at Bournemouth 8.6°. The rainfall at Kingstown was 2.05 inches on 11 days, and at Bournemouth it was 1.50 inches on 11 days. The frost set in at Bournemouth on the 8th and lasted for 11 days, while at Kingstown it lasted for only 7 days. The temperature of the sea at Sandycove Bathing Place on the 9th, when the frost set in, was 40°, from the 13th to the 15th it was 39°, it rose again to 40° on the 16th, and on the 28th it was

44°. The duration of bright sunshine was—at Kingstown 74·2 hours, at the Ordnance Survey Office, Phoenix Park 84·6 hours, at Valentia 82·2 hours, at Southport 58·1 hours, and at Eastbourne 72·1 hours.

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## PERISCOPE.

### CARE AND FEEDING OF INFANTS.

THE following plain suggestions as to the care and feeding of infants have been drawn up at the request of the Dublin Sanitary Association by a Committee representing the Royal College of Physicians of Ireland and the Royal Academy of Medicine in Ireland. *General Management.*—Cleanliness is essential to the health of all infants. The skin especially should be kept scrupulously clean by the free use of soap and water. Pure fresh air is of extreme importance. The infant should be taken out every day, if possible, and the room thoroughly ventilated. The clothing of infants should be light, soft, and warm, the limbs being well covered, and all tight bandaging should be avoided. Soiled linen must be immediately removed, and the nurse's hands then washed. *Breast Feeding.*—The mother's milk is the most natural and therefore the proper and most wholesome food for the infant. If the mother has plenty of milk, and is in good health, the child should have *no other food whatever* until the age of nine months. During the first three months of life an infant should be nursed regularly every two hours during the day (5 A.M. to 11 P.M.), and very rarely by night. From the third to the ninth month the intervals between the nursings should be gradually increased to three hours. Breast feeding should not be continued after the child is ten months old. *Hand Feeding.*—If the infant cannot be breast-fed, cow's milk is the best substitute obtainable. It requires, however, to be altered so as to render it suitable to infants of various ages. *During the first month* fresh cow's milk, diluted with at least twice the quantity of water, boiled and sweetened with sugar, is a good substitute for mother's milk, but is deficient in fatty matter, and, where possible, cream should be added. A wineglassful (about two ounces) of this may be given every two hours when lukewarm. *After the first month* the following would be a suitable food for the child:—A wineglassful (four tablespoonfuls, or two ounces) each of fresh milk and water (both boiled), one tablespoonful of lime water, and, if possible,

a teaspoonful of cream ; the whole being slightly sweetened. From one to two wineglassfuls of this may be given every three hours during the day, until the child is nine months old. N.B.—Starchy, farinaceous, or vegetable foods (bread, biscuits, potatoes, arrowroot, cornflour, &c.) should not be used as substitutes for milk, or given to infants under the age of nine months. The best form of feeding bottle is one with a wide mouth, an indiarubber mouth-piece, and without any tube. Corks and tubes become foul and turn the milk sour. Immediately after the child is fed the bottle and mouth-piece should be thoroughly cleansed with scalding water to which a little "washing soda" has been added, and then well rinsed and placed separately in clean water. Mothers are strongly warned against giving children soothing medicines or stimulants.

THE SECOND INTERNATIONAL CONGRESS FOR THE PROPHYLAXIS OF  
SYPHILIS AND OF VENEREAL DISEASES.

THE following is the programme of the subjects chosen for discussion at this Congress, which will be held at Brussels from September 1 to 6, 1902 :—I. *Public Prophylaxis*.—Whereas, on the one hand, it is the duty of the public authorities to safeguard society against contagious diseases, which, by their frequency and by the facility with which they are spread, constitute a public danger ; and while on the other hand, quite apart from the sanitary point of view, it is their mission to protect minors abandoned by their parents. A.—What measures of public prophylaxis, under the form of legal provisions, should be taken against venereal diseases, specially with reference to the following points :—Relatively to prostitution.—1. The prostitution of minors ; 2. The action of public bodies whether in the interest of public morality and tranquillity, or from a sanitary point of view ; 3. Procurers and bullies. Not associated with prostitution :—1. The protection of minors of both sexes ; 2. The organisation of measures of relief for those suffering from venereal diseases ; the duties of charitable institutions to those so suffering ; 3. Suckling by wet nurses ; contagion by midwives and nurses ; arm-to-arm vaccination ; contagion in factories and workshops by means of instruments of labour ; registry offices, &c. B.—Is it necessary to apply the principles of civil and penal responsibility for the transmission of venereal diseases ? II. *Individual Prophylaxis*.—Taking into consideration that if the public authorities have to

take prophylactic measures against venereal diseases, the duty of self-preservation is incumbent on every one—on the healthy, by the avoidance of all dangerous contact with an infected subject, and on the diseased by avoiding the possibility of infecting others.—

1. What are the best means of enlightening the youth and the general public on the social and individual dangers of syphilis and gonorrhœa, as well as the methods of contagion of these two diseases, direct or indirect? 2. How can one best facilitate individual prophylaxis by means of charitable institutions (dispensaries, refuges, &c.) and the medical treatment of patients of both sexes suffering from syphilis or gonorrhœa? III. *Statistics*.—What should be the uniform basis on which the statistics of venereal diseases in all countries should be formulated? IV. *Personal communications*.—In conformity with the decision of the first Conference, personal communications may be introduced, with the consent of the Committee on subjects not dealt with in the programme, and a special sitting will be devoted to their consideration. Mr. J. Ernest Lane, F.R.C.S. Eng., 46 Queen Anne-street, Cavendish-square, London, W., is the Secretary for Great Britain to this Congress. He will be glad to give any information in his power to those of his countrymen who wish to take part in the proceedings.

#### POSTURE AND HEART MURMURS.

DR. W. GORDON, M.A., M.D., M.R.C.P., in a very suggestive paper (*Brit. Med. Journ.*, March 15, 1902), observes that very little attention has been directed to the influence of posture on heart murmurs. Although most murmurs are better heard when the patient lies down than when he sits up, this is by no means universal. There are murmurs which are uniformly influenced in the opposite direction, and there are murmurs in which position produces practically no effect. Dr. Gordon concludes—(1) That recumbency tends to increase all "hæmic" murmurs except the venous hum, which it tends to obliterate; to increase the murmurs of mitral regurgitation, tricuspid regurgitation, and aortic stenosis; to decrease the murmur of mitral stenosis, and to leave little, if at all, affected that of aortic regurgitation; (2) That the effects of gravity and of change in chest-depth seem to account for the influence of recumbency; and (3) that, therefore, in describing and discussing murmurs which posture modifies, the patient's position at the time of observation should be stated.





Colles' Fracture reversed.—Dr. E. H. BENNETT.







**Impacted intra-capsular Fracture of the Neck of the Thigh Bone.**  
**DR. E. H. BENNETT.**

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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MAY 1, 1902.

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### PART I.

### ORIGINAL COMMUNICATIONS.

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ART. XII.—*On Dissociation, and the Ionic Hypothesis, as Applied to Medicine.* By WALTER G. SMITH, M.D.;  
Ex-President R.C.P.I.; Physician to H. E. the Lord  
Lieutenant; Physician to Sir Patrick Dun's Hospital.<sup>a</sup>

NOTE.—In the preparation of this Address the writer is much indebted to, and has freely borrowed from, the following works:—"Physikalische Chemie," Dr. Koeppe, 1900; "Physical Chemistry," James Walker; Ramsay, "Modern Chemistry, Theoretical"; "Theoretical Chemistry," W. Nernst, 1895; "Lectures on Chemical Pathology," Dr. C. Herter, 1902; "Practical Chemistry," Abegg and Herz; "Elementary Lessons in Electricity and Magnetism," Silvanus P. Thompson, 1902; Sollmann, "Text-Book of Pharmacology," 1901.

DURING the latter half of the 19th century the brilliant discoveries of organic chemistry were so remarkable that they fairly dazzled us, and almost shut out from view other aspects of the science.

Within the last twenty years, however, there has been a marked revival of interest in the sphere of inorganic chemistry, and to single out an individual case I may cite the name of M. Henri Moissan, the distinguished French chemist, who has devoted himself exclusively to the study of inorganic chemistry. To him we owe the isolation of fluorine, the electric furnace, the preparation of artificial

<sup>a</sup> Read before the Dublin Biological Club, Tuesday, April 8th, 1902.

diamonds, of borides and carbides, and many other discoveries of high scientific interest.

Nor can we fail to note the closer intertwining which has developed between chemistry and physics, and the study of theoretical chemistry is indissolubly bound up with the problems of molecular physics.

"Physical Chemistry" is now a well-recognised field of inquiry. It possesses its own periodicals, has given birth to an extensive literature, and is cultivated by some of the keenest minds and the most advanced chemists.

Still it is but a few years since Ostwald has told us how he and his friend Arrhenius, as they walked along the banks of the Mälarsee, tried to picture to themselves the then nebulous future of physical chemistry.

The year 1887 is memorable in the history of physical chemistry, for it witnessed the publication of van't Hoff's discovery of the analogy of the laws of gases with those of dilute solutions, and it was the year in which Arrhenius, in a classic memoir, enunciated his theory of electrolytic dissociation (*Nature*, Aug. 29, 1901).

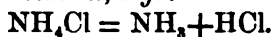
If we dip into any recent text-book of physiology or of pharmacology we are sure to meet with the terms *dissociation*, *ion*, and *ionic action*. Yet to many medical men these terms and the ideas they connote are as yet unfamiliar, and my task is to endeavour to lay before you a brief statement of what is implied by these words.

#### DISSOCIATION.

Let us first consider what is meant by the term Dissociation.

It is the converse to *association* of molecules into larger groups, and was originally used by St. Claire Deville, in 1857, to signify the resolution, under the influence of a rise of temperature, of a compound molecule into simpler constituents. Upon cooling, these products re-unite more or less completely to reform the original substance. This reversible process is termed

I. *Thermal Dissociation*, e.g. :—



i.e., one molecule breaks into two molecules, and hence the

pressure of the gaseous products is double that of an undecomposed molecule of sal-ammoniac.

Or, take the case of water. We do not know for certain the molecular formula of liquid water—*i.e.*, whether it is  $\text{H}_2\text{O}$ , or, as is more probable, consists of larger associated molecules,  $\text{H}_4\text{O}_2$ ,  $\text{H}_6\text{O}_3$ , &c. But the molecular formula for water-gas is undoubtedly  $\text{H}_2\text{O}$ , and at a temperature of about  $2000^\circ \text{C}$ . this splits, in part, into  $\text{H}_2$  and  $\text{O}$  gases, which recombine upon cooling.

It is important to emphasise the fact that in this type of dissociation the original molecules and the molecules of the products are electrically neutral.

And in this respect such a change differs essentially from the second type of dissociation, which is known as

## II. *Electrolytic or Ionic Dissociation.*<sup>a</sup>

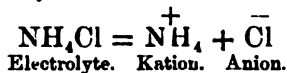
The essence of the modern theory of electrical dissociation may be baldly stated in a few words. In the dry state a salt, such as  $\text{NaCl}$ , undergoes no perceptible change, and its molecular condition remains the same indefinitely.

In aqueous solution certain compounds—*e.g.*, proteids, urea, sugar, alcohol—preserve their molecular magnitude unchanged, when tested by appropriate means.

On the other hand, many substances—generally those known as acids, bases, and salts—when dissolved in water, are believed, upon experimental grounds, to split up into simpler groups, or into their elementary atoms, which, in the act of separation, become endowed with definite charges of electricity, termed “electrons” (G. J. Stoney). A monad element or group carries one electron, a dyad two electrons, and so on. These electrically-charged atoms or groups of atoms are termed “ions” (*i.e.*, the wanderers), and under the influence of an electric current can be

<sup>a</sup> Perhaps we may have to recognise a third type of dissociation in reference to the electric conductivity of gases. G. F. Fitzgerald proposed in 1900 to restrict the term “ionisation” to the process of producing atoms differently electrified, and to introduce the term “electronisation” for the production of conductivity by the motion of particles of apparent mass of about  $\frac{1}{360}$  or, possibly,  $\frac{1}{1800}$  that of a hydrogen atom. In gases conductivity was probably due to both causes, and in liquids to ionisation only. Schuster and J. J. Thomson regard chemical decomposition as an essential feature of electrical discharge in gases.

urged in opposite directions. The one set, Anions, travel to the  $-$  pole, the other set, Kations, to the  $+$  pole, where they respectively unload their charges of electricity, and appear as electrically neutral elements or groups—*e.g.*,



This process—*viz.*, the breaking up in the act of solution of electrically neutral molecules into sub-molecules, or ions charged with electricity—is what is known as electrolytic dissociation, or ionisation: electrolytic because it is only such solutions as supply ions which are capable of conducting a current of electricity. A solution of sugar is almost a non-conductor, and there is no evidence of its breaking into ions.

At first sight this bold hypothesis appears incredible, or, at least, too improbable to be worth consideration. How, it may be asked, are we to believe that in an odourless solution, say of KCl, there exist independent ions of K and of Cl, knowing what we do of the properties of these elements in their ordinary free state.

But the difficulty is lessened, and is seen to be based upon misconception, when we reflect that what actually occurs in the solution is a number of single potassium atoms and of chlorine atoms, each laden with considerable electrical charges. On the other hand, what we know as “free potassium” is a solid substance whose molecule consists of an unknown, at least two, and probably a great number, of potassium atoms not charged with electricity at all.

Similarity in the properties of an element in states so different is hardly to be expected, and we know that a charge of electricity profoundly affects the chemical properties of substances.

The introduction of the idea of ionisation (electrical dissociation) into science marks a new era in our molecular conceptions, since it has revealed to us an entirely new species of molecule—*viz.*, the electrically-charged ion.

The same substance, under different circumstances, may decompose either into electrolytic or non-electrolytic molecules. Thus, sal-ammoniac—

(a) In dilute aqueous solution—



(b) By volatilisation—



These two processes are clearly different, and there is no known connection between them (Nernst).

The fundamental argument of the hypothesis is this, that in consequence of solution in water, many substances break up into a larger number of molecules than is indicated by their chemical formulæ.

How is this increase in the number of molecules ascertained?

The answer is supplied by four classes of data which are severally concerned with the number of molecules present in a given solution. And in the time at my disposal I can but glance hastily at these and give the conclusions to which they lead. I refer to:—

- (1) Osmotic pressure.
- (2) Depression of freezing point.
- (3) Rise of boiling point.
- (4) Electric conductivity.

*Osmotic Pressure.*—Diffusion and osmosis are only different manifestations of the same phenomenon—i.e., mutual interpenetration of molecules in the solid, liquid, or gaseous states. For we believe that the molecules of all substances above the temperature of absolute zero are in a state of incessant movement. When the process takes place freely and without impediment it is termed diffusion. When an obstacle or porous membrane intervenes, the question of pressure comes in, and we use the term osmosis.

If we consider two solutions of different composition, separated from each other by a porous septum or partition, we have two cases to reckon with:—

(a) The membrane or septum may be permeable, more or less, both to water and to certain of the substances dissolved in the water. This is the basis of the ordinary process of dialysis through parchment paper, or animal membrane.

(b) The membrane may be permeable freely to water alone, but impermeable to the dissolved substance.

Such septa are termed "semi-permeable membranes." They exist in animal and vegetable tissues, and can be artificially prepared in various ways. This method of investigation was very successfully carried out by the German botanist, Pfeffer.

An interesting example of semi-permeability in regard to gases can be cited from inorganic chemistry--

The rare metal palladium is permeable at high temperatures by hydrogen, but not by other gases. Now if a vessel made of palladium be filled with a gas that cannot escape through its walls—for example, with nitrogen at atmospheric pressure, and at a high temperature, say  $300^{\circ}\text{C}.$ , and if it be then surrounded with hydrogen gas, also at atmospheric pressure, the pressure of the gases in the interior of the vessel will rise to *two atmospheres*, owing to the entry of hydrogen through the walls, which are permeable to that gas alone. Hydrogen will enter until the pressure of the hydrogen in the interior is equal to that on the exterior of the vessel. But the nitrogen cannot escape, and therefore the interior pressure is doubled (Ramsay, "Modern Chemistry: Theoretical").

Yet although the molecules of the dissolved substance may not be able to force their way through the septum, they must, in virtue of their kinetic movement, exert pressure on the septum, and this pressure of molecular bombardment is known as Osmotic Pressure.

It is clearly analogous to gaseous pressure. For the molecules of dissolved substances, just the same as the molecules of a gas, have the tendency to occupy the *greatest possible space*, and hence the molecules of the substance will remove farther from each other the more dilute the solution is made.

Osmotic pressure is proportioned to the *number* of molecules present in solution in unit volume, and is independent of the nature of the molecules (van't Hoff).

If we measure the osmotic pressure of a solution of, say, cane sugar of different concentrations, we find that on doubling the number of molecules in a given volume of the solution, the osmotic pressure is also doubled, just as in the corresponding case of gases.

But experiments on osmotic pressure are troublesome to carry out, owing to the difficulty of preparing reliable semi-permeable partitions which will stand pressure.

In 1887, however, van't Hoff showed a way out of the difficulty. He pointed out that very simple relations existed between the osmotic pressure of solutions and two other physical data—viz., on the one hand, lowering of the freezing point of the solvent due to the presence of the dissolved substance; and, on the other hand, rise of boiling point of the solvent produced by the same cause.

All pure solid substances have a perfectly definite melting point, which is the same as the freezing point of the liquefied substance (if some of the solid is present).

We can indifferently say that ice melts at  $0^{\circ}\text{C}$ ., or that water freezes at  $0^{\circ}\text{C}$ . (if there is a trace of ice present).

If any substance—*e.g.*, sugar, is dissolved in the water, the freezing point of the water is lowered proportionately to the amount of dissolved substance present. Each gram-molecule of any soluble substance dissolved in a litre of water normally depresses the freezing point of water by  $1.85^{\circ}\text{C}$ .

*Depression of Freezing Point (Cryoscopy).*—In dilute solutions equal numbers of molecules of dissolved substances produce equal depressions of the freezing point of the solvent (Raoult). Or, equi-molecular solutions have the same point of solidification—*e.g.*, sugar and malic acid.

If a solution of sugar of known concentration freezes at  $0.2^{\circ}$  below zero, a solution containing half that quantity of sugar will freeze at  $0.1^{\circ}$  below zero.

#### RISE OF BOILING POINT.

Every pure liquid has a perfectly definite boiling point (at constant pressure). But if a solid is dissolved in a liquid the boiling point of the latter is raised, and it is found that the rise of boiling point is proportional to the number of molecules of the dissolved substance present (Beckmann).

Hence we have three sets of different, but convergent, data all connected proportionally with the numbers of molecules in a given volume of solution.



The quintessence of these important discoveries may be thus expressed:—

Solutions of different substances in the same liquid which contain in the same volume *an equal number of molecules* of the dissolved substance, have the *same osmotic pressure*, the *same vapour pressure*, and the *same freezing point*.

And now comes in the difficulty which led to the enunciation of the bold hypothesis of ionic dissociation.

Although solutions of indifferent organic substances—*e.g.*, sugar—as a rule obey the laws just referred to, it is found that a large number of inorganic substances, chiefly acids, bases, or salts, are known which in dilute solution do not conform to the above physical data, especially as to depression of freezing point or rise of boiling point. And it has been observed that when the dilution is sufficient the depression of the freezing point reaches a maximum, and that this maximum is two, three, or four times what might be expected from the molecular formula.

Therefore, just as when if in the conversion of a solid substance into gas we find that the pressure of the gaseous product is double that deduced from the molecular weight of the substance, we infer that the number of molecules has been doubled by dissociation, so if in the solution of a substance in water we find that the depression of the freezing point amounts to double that which the molecular weight of the substance would lead us to expect, we infer that the original molecule is split into two sub-molecules, or ions.

Even with this experimental support the hypothesis of ionic dissociation might have failed to gain acceptance had it not been for a very remarkable coincidence, to which I now ask your special attention. I refer to the phenomena of electrolysis, which may be called the key-stone of the ionic hypothesis.

#### ELECTROLYTIC DISSOCIATION.

(a) It is found by observation that solutions of neutral organic substances—*e.g.*, sugar—which conform to the molecular laws of osmotic pressure, freezing point and

boiling point, do not permit the passage of a current of electricity through them—*i.e.*, are non-electrolytes.

The reason of this is believed to be that, *e.g.*, sugar consists of uncleaved molecules, which are electrically neutral, and are non-conductors.

(*b*) On the other hand, aqueous solutions of acids, bases, and salts (which usually behave anomalously in regard to osmotic pressure, freezing point, and boiling point) permit the passage of an electric current—*i.e.*, are electrolytes. At the same time they undergo a cleavage into their elements, or into groups of elements, which appear at the electrodes, and were designated by Faraday “ions”—*i.e.*, the wanderers.

Anions (*e.g.*, acid radicals) appear at the—electrode, and Kations (*e.g.*, the metals) at the + electrodes.

The electric charges are represented by (·) for Kations, and (′) for Anions. As an example of electrolysis we may take the “Acker” fusion process for the electrolytic production of caustic alkali and chlorine at Niagara Falls. The process depends upon the decomposition of molten salt with a carbon anode, and a kathode of molten lead. A lead-sodium alloy is formed at the kathode. The circulation and renewal of the molten kathode material is effected by means of high-pressure steam and an injector. The lead-sodium alloy is carried into a separate vessel, where the steam decomposes the alloy with formation of sodium hydrate, hydrogen and lead. By careful regulation of the steam supply, the caustic alkali can be obtained as fused anhydrous NaOH, and the necessity for evaporation of the surplus water at a later stage is avoided. The hydrogen gas is collected and burnt, the heat being utilised for the preliminary heating of the rock salt used to feed the cell; while the molten lead flows back into the cell and functions again as kathode.

Without liberation of ions no current passes. It was experimentally proved by Faraday that the same quantity of electricity is conveyed by weights of elements proportional to their *equivalents*. It has further been proved by Hittorf that the electrically-charged ions actually travel or migrate at *definite rates*, and in opposite

directions, carrying with them their respective electric charges, which they deliver up when they touch the electrodes, and so are discharged.

Since the conveyance of electricity depends upon the number of ions and on the rate at which they move, if the latter is determined, the relative number of ions—*i.e.*, degree of ionisation—may be calculated from measurements of the conductivity of the solution. The conductivity, in short, is proportional to the number of dissociated molecules of matter in the solution, and increases with dilution up to a certain point—*i.e.*, the maximum dissociation.

58.5 grms. (*i.e.*, one molecule) of NaCl in 1 litre of water have a molecular conductivity of - 69.5

In 10 litres - - - = 86.5

In 10,000 litres - - - = 102.9

In 50,000 litres - - - = 102.8

So far as viscosity (or frictional resistance) is concerned, a dilution of 1 molecule in 10 litres is practically pure water, and further additions of water will have no appreciable effect in changing the resistance offered to the passage of the ions. Therefore, the increase of conductivity with further dilution is not due to any increase of speed of migration of the ions, but to an increase in their number. When all the salt has been split up into its ions the increase of molecular conductivity with dilution must cease. The true measure of degree of dissociation is the *ratio* of molecular conductivity at *finite* dilution to the molecular conductivity at *infinite* dilution.

An ion, then, is an electrically dissociated fraction of a neutral molecule, carrying a certain electric charge, and in solution it ranks as a molecule, whether it represents a single atom or a group of atoms. The extent of ionisation calculated from the conductivities of salt solutions agrees fairly, in the main, with that calculated from the depression of freezing point.

This fruitful idea of electrolytic dissociation originated with Clausius in 1857, and was re-affirmed by Helmholtz in 1880. But the idea remained latent and barren of results until Arrhenius, in 1887, showed how to determine

the nature and the number of the ions, and clearly pointed out the fertile applications of the hypothesis.

Clausius was the first to clearly see that electrical energy is not expended in splitting up the dissolved salt molecules into their constituent ions, as was postulated on the old theory of electrolysis.

This follows from the experimental facts that a feeble current suffices for electrolysis, and that the current is proportional to the E. M. F. for all values of that force.

The affinity of H for oxygen is represented by an E. M. F. of 1.47 volts. Hence, no cell can decompose water at ordinary temperatures unless it has an E. M. F. of at least 1.47 volts. With every electrolyte there is a similar minimum E. M. F. necessary to produce complete continuous decomposition.

One coulomb of electricity passed through water liberates .000010384 grm. H per second, or each grm. of H liberated by an electric current corresponds to the passage through the electrolyte of 96,300 coulombs of electricity.

Hence the electro-chemical equivalent of other elements can be found by multiplying the above fraction by the chemical *equivalent* of the element.

Moreover, the products of electrolysis appear simultaneously at the electrodes, no matter how far apart these may be.

How is all this intelligible? Let us hear Clausius himself, as expounded by Clerk Maxwell.

According to the kinetic theory of molecular motion, every molecule of the electrolytic liquid is moving in an exceedingly irregular manner, being driven first one way and then another by the impacts of other molecules which are also in a state of agitation.

This molecular agitation goes on at all times independently of the action of electro-motive force. The agitation being exceedingly irregular, the encounters of the molecules take place with various degrees of violence, and it is probable that even at low temperatures some of the encounters are so violent that one or both of the compound molecules are split up into their constituents. Each of these constituent molecules (*i.e.*, ions) then knocks about

among the rest till it meets with another molecule of the opposite kind, and unites with it to form a new molecule of the compound, and so reunion and decomposition recur continually.

Now, Clausius surmised that it is on the ions, in their intervals of freedom, that the E. M. F. acts, deflecting them slightly from the paths they would otherwise have followed, and causing the  $+$  constituents to travel, on the whole, more in the  $+$  than in the  $-$  direction, and the  $-$  constituents more in the negative direction than in the positive. The E. M. F., therefore, does not produce the disruptions and reunions of the molecules, but finding these disruptions and reunions already going on, it influences the motion of the ions during their intervals of freedom. All that the electric current does is to direct the dissociated charged products or ions to their respective electrodes, and there discharge them (Walker, "Physical Chemistry," 1899, p. 218). See diagram, p. 516, Silvanus Thompson, "Lessons in Electricity."

(To be continued.)

ART. XIII.—*Cancer Mortality in England and Wales within the last Forty Years.*<sup>a</sup> By JOHN TATHAM, M.A., M.D. Univ. Dublin; Fellow of the Royal College of Physicians, London; of the General Register Office, Somerset House.

You will easily understand that it is not in my power to contribute to your discussion anything of importance from the pathological or from the clinical side concerning malignant disease. It affords me, however, great pleasure to place before you certain statistical data, which will enable you to estimate, with a near approach, to accuracy, the fatal mischief which is wrought by malignant disease in the country generally.

I must premise that the term "malignant disease" is here taken to include all the diseases classed as malignant in the last edition of the Nomenclature of the Royal College of Physicians of London.

<sup>a</sup> Being an abstract of a paper read at the Jenner Institute of Preventive Medicine before the Chelsea Clinical Society.

In the Annual Reports of the Registrar-General of England all malignant diseases have hitherto been grouped together under the single term "cancer," and the deaths from these diseases at the present time average rather more than twenty-five thousand a year in England and Wales alone. With the opening of the new century a revised classification of diseases has been adopted in the General Register Office (of which a shortened form is published in the London weekly returns). In this new list the carcinomata, or true cancers, are distinguished from the sarcomata, and these again are distinguished from the indefinite conditions which are ascribed in medical certificates to "malignant disease," or "cancer" merely, without further qualification. That medical practitioners appreciate this modification in the classification of a most important group of diseases is shown by the fact that in London since the beginning of the current year, when the revised list of diseases was inaugurated, the deaths from malignant diseases have been differentiated to a considerable extent after the new method. Thus, in the medical certificates of deaths from these diseases, supplied for registration purposes, 52 per cent. have been certified as from *carcinoma*, 6 per cent. as from *sarcoma*, and the remainder, amounting to considerably less than half, as from "cancer," or malignant disease, simply.

It is highly gratifying to me, as I am sure it will be to you, gentlemen, to note how readily the practising members of our profession have responded to this recent attempt to secure greater accuracy in the national records of mortality respecting the cases of malignant disease that come under their care. Having regard to the desirability of securing in the national statistics of fatal cancer the greatest possible completeness, it is to be hoped that, in future, medical attendants will always append to their certificates intimation of the organ or part of the body affected, and will also give, where possible, particulars concerning the kind of malignant disease that may be present.

Malignant disease in the aggregate—*i.e.*, without specification as to organ or part affected—is more fatal to women than to men. According to the latest returns (*viz.*, those

334 *Cancer Mortality in England and Wales.*

for the year 1900) the male death-rate from "cancer" in England and Wales was equal to 672 in each million living, whilst the female death-rate amounted to not less than 975 per million. This excess, however, is due to the unequal tendency of malignant disease to attack the generative organs of the female rather than those of the male. On reference to the following table it will be seen that when the deaths from cancerous affections of the ovaries, uterus and breast are subtracted from the total cancer deaths, the remainder give a death-rate among females which is considerably below that among males. Thus, in the four years 1897-1900, the *male* deaths from "cancer," less the deaths from disease of the organs referred to, corresponded to a death-rate of 645 per million living of that sex, whilst the *female* death-rate, with the same limitations, did not exceed 568 per million.

TABLE A.—*Mean Cancer Mortality in England and Wales in the period 1897-1900.*

[Total Deaths in the four years, 102,685.]

PARTS AFFECTED	DEATHS		RATE PER 1,000,000 LIVING	
	Male	Female	Male	Female
All parts - - -	40,317	62,368	657	952
Lip - - -	647	74	11	1
Mouth - - -	508	115	8	2
Tongue - - -	2,124	271	35	4
Throat - - -	891	334	15	5
(Esophagus - - -	2,358	852	38	13
Stomach - - -	8,369	8,355	136	127
Intestines - - -	6,312	6,731	103	103
Liver - - -	5,532	8,654	90	132
Generative and Mammary Organs	726	25,151	12	384

The mortality from cancer is not very excessive until

some time after the twenty-fifth year of age. Thus, at ages under thirty-five years of age it averages from 44 to 66 per million living, but as age advances the mortality increases, in both sexes, very rapidly, until at the more advanced ages it is enormous. This will readily appear from the following table:—

TABLE B.—*Rate of Mortality from Cancer in England and Wales, at certain periods of life, in each Sex, A.D. 1900.*

	ANNUAL DEATH-RATE PER 1,000,000 LIVING AT EACH AGE	
	Male	Female
All ages - - - - -	672	975
Under 35 years - - - - -	44	66
35-45 - - - - -	418	942
45-55 - - - - -	1,483	2,433
55-65 - - - - -	3,796	4,561
65-75 - - - - -	5,735	6,254
Above 75 years - - - - -	6,715	7,468

It is notorious that in recent years the mortality from malignant disease has increased very rapidly, not only among females but among males. This is shown by the subjoined table:—

TABLE C.—*Average Rate of Mortality from Cancer in England and Wales, per Million living of each Sex, in two decennial periods.*

MALES		FEMALES		INCREASE IN 1891-1900 PER CENT.	
1861-70	1891-1900	1861-70	1891-1900	Males	Females
242	597	519	903	147	74

If, therefore, the published returns are to be trusted, it appears that although at the present time women still suffer more severely than men from malignant disease in



the aggregate, nevertheless during the last thirty years malignant disease has increased among men much more rapidly than among the other sex.

**ART. XIV.—*Clinical Report of the Rotunda Lying-in Hospital, for Year ending November 1, 1901.***<sup>a</sup> By R. D. PUREFOY, M.D. T.C.D., F.R.C.S.I. (Master); and PAUL CARTON (Assistant).

(Continued from page 260.)

**MULTIPLE PREGNANCY—TWINS.**

There were twenty cases of this variety during the year:—

Male and Female .. .. .	7
Both Male .. .. .	7
Both Female .. .. .	3
Male and Mummified Fœtus .. .. .	1
Male and Monster .. .. .	1
Premature .. .. .	1
Both Vertex .. .. .	11
Vertex and Breech .. .. .	3
Breech and Vertex .. .. .	1
Brow and Vertex .. .. .	1
Breech and Monster .. .. .	1
Breech and Shoulder .. .. .	1
Breech and Mummified Fœtus. . . . .	1

In one case hydramnios of the second sac occurred with succenturiate placenta. In one hydramnios of both sacs was observed, with much swelling of legs and belly, without the urine being albuminous. One case was complicated with concealed accidental hæmorrhage, and the first child presented occipito-posterior, and required instrumental delivery. Internal podalic version was necessary in one instance. One case was complicated by placenta prævia. In one a brow presentation was delivered by forceps. In one case the twins consisted of a well-formed

<sup>a</sup> Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, March 14, 1902.

male child, which presented by a foot and a soft lobular mass lying anterior to it, the exact nature of which could not at first be determined satisfactorily. By pushing it up and applying traction to the foot, delivery of a male living child was effected. Efforts at version failed for second child, as limbs could not be caught. Rotation of the mass on its long axis was effected by grasping it with the hand, and was followed by increased descent of the presenting portion, which was then seized with Auvar's cranioclast, and delivery completed. The monster consisted of a globular mass, having no differentiated head or neck, one end terminating as a blunt oval and the other presenting one rudimentary leg ending in a flail-like foot, having three toes. The other leg was represented by a mere stump. No trace of the upper extremities was observable. It is interesting to notice in this connection a very similar case lately recorded by Dr. Halliday Croom. In one case where the first presented by the foot, the second fœtus was lying transversely, and external cephalic version was performed.

TABLE NO. VIII.—*Application of Forceps.*

Indications	—	Dead Children	Remarks
Delay in 2nd stage, with danger to mother and threatened death of fœtus -	45	3	
Threatened eclampsia -	5	—	
Threatened rupture of uterus -	1	—	
Pelvic contraction -	5	—	
Prolapse of funis -	4	2	
Accidental hæmorrhage	3	3	
Persistent occipito-posterior -	4	—	
Total, -	67	8	

SUB-TABLE A.—*Showing Number of Pregnancy.*

I.-para	-	49	VIII.-para	-	2
II.-para	-	5	IX.-para	-	2
III.-para	-	3	XI.-para	-	3
IV.-para	-	1	XII.-para	-	1
					Total
					66

SUB-TABLE B.—*Showing Ages of Primiparae.*

17-25	-	-	17
26-30	-	-	24
31-35	-	-	6
36-40	-	-	2
			Total
			49

In many of the cases included under the heading "Delay in second stage with danger to mother or child," we had reason to know the second stage had been prolonged considerably beyond the customary time-limit of four hours. We have always adhered to the opinion that there are other and more important indications as to the proper time for terminating the labour artificially.

In two cases of twins, where both presented by the head, both children were delivered by forceps alive.

Physometra, with stinking, grumous discharge, was present at the time of admission in a patient—M. B., aged forty, 3-para—who was sent from one of our city institutions. Notwithstanding the external and internal uncleanness of the patient and the presence in the bladder of four pints of fetid urine, she convalesced so steadily that her discharge from the hospital took place on the ninth day of the puerperium.

In five cases where the occurrence of eclampsia seemed imminent it was deemed advisable to apply forceps as soon as it could be safely done, to prevent delay in labour, with its attendant risk of convulsions. In the case of threatened rupture of uterus, though the second stage had lasted only a short time, owing to very violent uterine action, Bundle's

ring became easily palpable. Though the head was still above the brim, the delivery was effected without difficulty. In the five cases of contracted pelvis in this Table most satisfactory results were obtained, a living child being born in each instance. For prolapse of the cord forceps were applied on four occasions, and in two of these the child was born alive. In the three cases of accidental hæmorrhage where forceps were used only one child was born alive. During the year thirteen cases of persistent occipito-posterior were recorded, of which number only four needed forceps.

#### EPISIOTOMY.

Episiotomy was practised in eighteen cases, chiefly as an aid to forceps extraction, and in a few instances (where the delay appeared due to the rigidity of the perineum) to allow of the natural efforts completing delivery. In every case the results obtained were satisfactory. The single incision in the mesian line was invariably adopted.

#### INDUCTION OF PREMATURE LABOUR.

In five cases labour was induced, owing to pelvic contraction, by inserting in the uterine cavity bougies, generally three in number—their action being sometimes aided by placing laminaria tents in the cervical canal, and sometimes by using vaginal tampons. In some cases these measures were slow in provoking uterine action, even when aided by the administration of quinine and the use of the galvanic battery. Our observation plainly leads us to the conclusion that uterine action is more easily and certainly provoked in those patients who have on former occasions been successfully treated in this manner. In the case of R. M., aged thirty-eight, the patient's statements as to duration of pregnancy were entirely misleading, and some days after her admission to hospital liq. amnii and meconium began to escape from uterus, while the cervix barely admitted a finger-tip. Tents were introduced into cervix, and vaginal tampon used, but not till the third day was the cervix dilated sufficiently to admit of a foot being brought down. For many days after delivery the patient complained much of pelvic distress and soreness in the

pubic region, and this was followed some days later by a copious discharge of pus through an opening in the vestibule. A probe passed into this opening came into contact with a considerable surface of bare bone in front of symphysis. After this escape of pus convalescence was speedy and satisfactory. We have, with great regret, to record this year the only fatality consequent on the induction of premature labour which has occurred in the hospital during the past five years. The patient M. B., aged thirty-six, 5-para, was admitted from the country, where she had been delivered instrumentally on four occasions of still-born children. The uterus responded slowly and inefficiently to the stimuli employed, but finally expelled, unaided, a dead foetus. The placenta was adherent, and required manual removal, as on each former occasion. A rise of temperature, while the pulse was still quiet, occurred on the third day, but as microscopically only the *Bacterium coli* could be discovered on curetting the uterus, great hopes were entertained that the elevation of temperature was not of serious import. Daily uterine douching and plugging with iodoform were, however, regularly carried out, but failed to avert a fatal termination, which occurred on the eleventh day.

#### OPHTHALMIA.

Four cases of ophthalmia occurred during the year. In all the attack was mild, and had entirely subsided before the infant left the hospital. The prophylaxis of this disease is still carried on, as heretofore, by the instillation of silver nitrate.

#### MENSTRUATION IN INFANTS.

A red, vaginal discharge, having the characters of menstrual fluid, was observed in two infants, beginning on the second day after birth, and lasting for four or five days. As in both cases the child's condition did not afford any indication for treatment, none was adopted.

#### ICTERUS.

The percentage of children showing this affection corresponds very much with that observed in former years.

and the treatment adopted was also similar. One case deserves special mention on account of the intense discoloration of the skin, prostration and inability to take nourishment, and the presence of marked opisthotonos. The mother had previously borne only stillborn children, and though no distinct history of syphilis was obtainable, it was deemed advisable to administer mercury to the infant. During four days signs of life were at times discovered only with difficulty, but at length tardy improvement was observed, and though the discoloration of the skin persisted for many weeks, the child is now enjoying robust health.

#### ABORTION.

There were sixty-four cases of abortion treated in the hospital during the year, and in no case was there any serious rise of temperature or other complication. In nine cases the abortion was complete and needed no treatment. Severe hæmorrhage occurred in only five cases. In the management of those cases which required treatment the flushing curette was generally used.

#### ECLAMPSIA.

There were only two cases of this affection under treatment since our last Report:—

CASE I.—R. M., aged twenty-five 2-para; at term; admitted November 19. Labour was uneventful and completed by natural efforts; infant, female, 7 lbs., alive. Some hours after delivery secondary hæmorrhage took place but was easily controlled. Shortly afterwards patient had a fit and was immediately given morphia, followed by a dose of croton oil. Subsequently only two fits occurred; and with the exception of one rise of temperature, convalescence was most satisfactory. The urine contained a considerable amount of albumen.

CASE II.—J. K., aged twenty-one, 1-para; admitted April 16 from the Extern Maternity, one fit having occurred before she was seen. Half a grain of morphia was injected; a second fit followed in a short time. On admission the urine was found loaded with albumen; uterus hard and size of full term pregnancy, though it was believed that only the seventh month had been reached; foetal parts not felt; cervix small and hard. While

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using the bed-pan five ounces of blood escaped from the vagina. There was no recurrence of the fits, and labour ended about ten hours later with the birth of a stillborn child. The placenta was found to be in great part detached—*ante-partum* clots lying on its surface and in its substance.

TABLE No. IX.—*Cases of Uterine Fibroid.*

Name	Age	Para	Presentation	Period of Pregnancy	Child	REMARKS
E. C.	36	II.	Breech	Term	A.	Cæsarean section : see Report
A. H.	27	V.	Vertex	"	A.	Fibroid at fundus
M. T.	22	I.	"	"	A.	Fibroid at left cornu
B. C.	20	I.	"	"	A.	Interstitial fibroids at fundus
M. O'T.	25	III.	"	"	A.	Fibroid—billiard ball at fundus
M. B.	39	III.	"	"	A.	Traces only of several fibroids which were plainly felt in two former pregnancies.

FACE PRESENTATION.

Amongst our intern maternity cases 5 presented by the face, and of these three were primiparæ. Of the remainder one was a 2-para, and the other a 5-para. In no case was the forceps used. In the 5-para hydramnios was present, and the fœtus (6½ months) was anencephalic, with double talipes, equino-varus and dislocation of both knee-joints (see "Hydramnios"). Of the five cases the anencephalic fœtus was the only one stillborn.

BROW PRESENTATION.

Only once was a brow presentation observed, and it was the first of twins. Owing to delay in the second stage delivery by forceps was resorted to.

## BREECH PRESENTATION.

During the year forty-three cases of presentation of the lower pole occurred, in thirty of which a living child was born. Of the thirteen stillborn children ten were macerated, one was associated with placenta prævia, and two were premature. In twenty-two of the thirty cases where a living child was born it was found necessary to assist the patient. In two cases arrest occurred. In one, where the delay took place at the outlet, delivery was effected without much difficulty by digital traction applied to the groin. In the other case, at the time of admission the membranes were ruptured and breech was engaged in pelvic cavity, the os being still only partially dilated. Morphia and, subsequently, a warm bath were used, and further interference postponed in the hope that the natural efforts would complete delivery. When longer delay appeared unsafe a fillet was passed round the thigh, and by its means traction was successfully exerted. Unfortunately, delivery was still further delayed by the chin becoming hitched on the symphysis, and the foetal heart ceased before the completion of delivery. As might be expected, convalescence was slow, and only imperfect union of the lacerated perineum was secured. A high range of temperature (reaching on one day  $106.2^{\circ}$  F.) prevailed for several days, necessitating her retention in hospital for three weeks, at the conclusion of which she was discharged in good health.

## MORBIDITY.

Of the patients under the first heading—viz.,  $100.8^{\circ}$  to  $101.2^{\circ}$  F.—twelve showed one rise of temperature during an otherwise normal puerperium, and no treatment was required. The remainder were mild cases, which yielded readily to treatment. One was a case of hydramnios, in which the membranes were adherent and removed by curette with some difficulty. One a case of accidental hæmorrhage; child stillborn; large clot expelled with placenta. One a forceps delivery, owing to prolonged second stage, extraction difficult; considerable laceration of perineum, and some *post-partum* hæmorrhage. In one the placenta was entirely adherent down to os internum



(battledore shape), and removed manually. In one on seventh day the uterus was found enlarged and retroflexed, containing a quantity of blood clot. One was a patient, admitted from a large public institution in a horribly filthy condition; genitals excoriated by foul, stinking discharge; bladder containing four pints of foul urine; head on perineum; no foetal heart heard; on delivery foul gas and fluid escaped in large quantity. Between 101·2° and 102·2° there were four cases included in sub-table, and requiring special treatment. Of the remainder, twenty-four only once during the puerperium showed an abnormal temperature. One was a case of twins, with hydramnios of the second ovum, with succenturiate placenta. In one case head and hand presented, and the latter was replaced. In one there was considerable accidental hæmorrhage, due to complete *ante-partum* detachment of placenta, which was expelled with a macerated foetus. Mania developed in one case on the sixth day, two days after the temperature had fallen to normal. Another was a marked case of eclampsia, which occurred subsequent to delivery; the urine was highly albuminous.

Between 102·2° and 104° F. seven cases are included in the sub-table, suffering respectively from syphilis, mania, bronchitis, mastitis, phthisis, and erythema. This latter affection in the case referred to assumed an unusually severe type, not only as regards temperature and pulse, but also in the degree to which the cutaneous circulation was affected, evidenced by the extensive exfoliation of the cuticle, which fell off in large flakes. The cases of lues were profoundly cachectic, and the condition of the external genitals, owing to the presence of numerous discharging sores, was calculated in a high degree to increase the perils of child-bed. In the case of mania, the mental disturbance began on the fifth day. Of the septic cases four left the hospital within nine days convalescent. One was a case of accidental hæmorrhage, and one a case of labour, prematurely induced on account of contracted pelvis. One was a case of macerated foetus. Puerperal ulcer was observed in two cases, in one of which manual removal of placenta had been found necessary. In the remaining

cases fragments of membrane or blood-clot undergoing decomposition were removed. All of these left the hospital convalescent within eleven days, excepting one, who was detained in hospital twenty-one days owing to general debility.

The case of phthisis, which ended fatally, had been confined to her bed for two months previous to admission, and traced the beginning of her illness to an attack of influenza. The physical signs of phthisis, which were well marked on admission, became accentuated after delivery. Death occurred on the seventh day of the puerperium.

Of those above 104° one was a case of Cæsarean section, and one a case of induced labour—both of which ended fatally. One case, included in sub-table, developed influenza, and on the sixth day reached a temperature of 105°. She left the hospital convalescent within nine days. In one—a case of impacted breech in a primipara—labour was protracted, and delivery effected with great difficulty. Notwithstanding its immediate repair the healing of the perineal rent took place slowly, and was attended with much suppuration, the temperature on one occasion reaching as high as 106·2°. She left hospital on the twenty-first day, quite convalescent. In one—an unmarried woman—the convalescence was very slow, doubtless owing to the destitution in which she had lived for many weeks before her admission.

TABLE NO. X.—*Morbidity.*

Temperature	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
100·8° to 101·2°	2	2	1	4	1	5	1	3	2	7	1	-	29
101·2° to 102·2°	2	2	4	3	5	3	4	1	2	4	4	1	35
102·2° to 104°	3	1	1	2	1	-	-	1	-	2	3	1	15
104°	-	2	1	1	-	-	-	-	1	-	1	1	7
Total monthly .	7	7	7	10	7	8	5	5	5	13	9	3	82
Percentage .	5	4·4	3·8	5·7	4·3	5·09	2·9	3·3	2·3	8	4·8	1·9	4·2

## SPECIFIC CAUSE OF MORBIDITY OTHER THAN SEPSIS.\*

Mastitis	-	4	Phlebitis	-	—
Influenza	-	2	Syphilis	-	2
Bronchitis	-	3	Gonorrhœa	-	—
Phthisis	-	1	Erythema	-	2
Pleurisy	-	1	Not ascertained	-	12
Constipation	-	—	Inflamed Piles	-	1
Eclampsia	-	—	Rheumatism	-	1
Mania	-	1			
			Total -	-	30

TABLE NO. XI.—*Prolapse of Funis.*

Name	Age	Date	Para	Period of Pregnancy	Presentation	Result to Child	Remarks
1. K. M.	23	Nov. 27	I.	Term	Vertex	D.	Forceps
2. E. M'G.	25	Dec. 25	II.	"	"	D.	Forceps; membranes ruptured before admission
3. H. A.	35	Jan. 20	V.	6½ months	Footling	D.	Unaided, because cord was prolapsed and pulseless at time of admission
4. C. M.	30	" 23	VII.	"	Vertex	A.	Unaided
5. M. G.	27	Mar. 2	III.	Term	Hand & foot	A.	Traction.
6. M. C.	43	" 7	XII.	"	Vertex	A.	Forceps; cord pulseless at time of application
7. M. C.	23	" 13	II.	"	Breech	A.	Traction
8. A. F.	25	Apl. 4	II.	"	Vertex	A.	Forceps
9. M. T.	23	May 18	IV.	6 months	Breech	D.	Fœtus macerated
10. H. R.	32	June 22	VI.	Term	Footlings	A.	Twins

Prolapse of funis being a complication of labour fraught with peril to the fœtus, it is a matter for much satisfaction that in the ten cases occurring in the hospital during the past year the fœtal mortality was so low. In the case of E. M'G. the fact of the membranes having ruptured before admission, at which time no doubt the

\* These are included in the numbers in the table above.

prolapse occurred, left little possibility of successful treatment. An even more hopeless condition was present in the case of H. A. when she came under observation. In the case of M. C., though pulsation in the cord was no longer to be felt, rapid extraction with the forceps resulted in the birth of a living child. M. C. had hydramnios, and the escape of liquor amnii, which occurred during a vaginal examination, was attended with prolapse of the funis. The child of A. F. was in such a feeble condition at birth that Schultzing was deemed necessary. For eight days subsequently marked opisthotonos was observable.

#### CÆSAREAN SECTION.

CASE.—E. C., aged thirty-six, 2-para; thin and of wretched aspect. Escape of liquor amnii had taken place some days before her admission on Dec. 18, and pains had followed, but did not continue. Examination showed that uterus reached to ensiform cartilage. Fœtal heart to left of umbilicus, above which a small fibroid could be felt. A large hard tumour occupied pelvis below promontory, leaving space to pass fingers to cervix which is above brim. Membranes felt over the presenting part, which floats. Head in right fundus. Tumour, though slightly movable, cannot be pushed up out of pelvis. Cæsarean Section, Dec. 19.—Abdomen and uterus opened, child removed. Large fibroid lifted out of pelvis; pedicle transixed and tied. For several days after the operation, though pulse and temperature were normal, the patient's aspect showed no improvement; nourishment was badly taken, and the bowels were moved with much difficulty. Stitches were removed on eighth day, when a drop of pus was observed at lower angle of wound. Two days after a sudden rise of pulse and temperature occurred, and the patient rapidly sank. At the autopsy pus was found lying on front of uterus; a coil of intestine nearly gangrenous was adherent to back of uterus.

#### PUERPERAL APHASIA.

This rare and interesting condition was well illustrated in the case of R. F., aged thirty-three, 1-para, healthy appearance, who was admitted on the 9th and discharged on the 16th of April. Her history was as follows:—Her pregnancy had proceeded most favourably till the beginning of the 9th month, at which time her husband one day, on his return from work, found her in bed,

and unable to speak anything but the word "yes." At the same time he observed large quantities of vomit on the floor. Her labour was uneventful, and during the puerperium the following observations were made:—

*Nervous System.*—Cranial Nerves.—1st. Olfactory sense apparently normal. 2nd. Optic discs normal; vision normal. 3rd, 4th, 6th. Ocular movements good and equal in all directions; pupils react to light and accommodation; no nystagmus. 2nd. Facial movements normal. 5th. No sensory changes; taste normal. 8th. Hearing normal. 9th. Palate, nil; swallowing unimpaired. 10th, 11th and 12th. Nil.

*Mental Condition.*—Slight mental hebetude; receptive power slightly impaired; understands what is said to her, but after a slight interval; performs required actions after an interval. Writing power is fairly good; most of her letters well formed, but at the end of a word the letters are not so well formed as at the beginning. Memory is apparently unimpaired, as she is able to write down her age and where she lives, although when asked to speak the answers she was unable to do so. A few days after delivery she became able to say some words, as "yes," "no," "third," "I don't know;" but as often as not she would answer "yes" when she should have said "no," &c.

*Motor Power* is good in legs and arms; no paralysis detected; sensory nerves; no anæsthesia; no analgesia; thermal sense normal.

*Reflexes.*—All normal.

*Sphincters.*—Has had no incontinence of fæces or urine since admission, and the patient apparently always knew when there was need for the performance of either function.

*Arteries.*—No thickening or tortuosity detected.

*Heart.*—Sounds clear in all areas; apex beat normal in position.

Before going out the patient was able to repeat her prayers, &c., fairly correctly. The words she uses are correctly said; there is no slurring or misplacement of syllables. Patient could read written questions, and write the answers fairly correctly as regards spelling, but often wrong as regards sense.

Owing to the kind exertions of my friend Dr. Wilson, who recently resided some months in the hospital, I am in a position to supplement this most important history with the following details relative to the woman's present state of health:—

On examination, ten months after being in hospital, patient

states that four months elapsed before she recovered comparative freedom of speech, but it has gradually improved. No defect is apparent in the cranial nerves.

*Mental Condition.*—Mental action is slower than normal.

1. She understands all that is said to her, in accordance with her education.

2. She has the power of recognising uses and relations of objects—*i.e.*, no aphasia.

3. She had the power to recall names of familiar objects seen, tasted, heard, or touched, or smelled, though she is unable to tell the names of unfamiliar objects, although she may know in her own mind what the name is, and, if pronounced by another, she at once recognises it, and can say if it is properly pronounced.

4. She can understand printed or written language.

5. Understanding of musical tones is somewhat deficient (perhaps normally so).

6. She has the power of voluntary speech, and there is no misplacement of words.

7. She can read aloud, but not so well as she could do before her illness.

8. Patient has lost the power of voluntary writing, except a few words, such as her name and address, and the name of her child. She is not able to voluntarily pen a letter, though she knows what she wishes to say (agraphia). Her husband does her correspondence.

9. Patient is quite able to copy correctly from writing or print. She gets her husband to write what she dictates to him, and then she can easily copy it, and write the letter.

10. She can write to dictation, only very short and simple sentences. Each word must be repeated separately before she can write it, and even then she spells words wrongly. When the correct spelling is shown she can at once detect her error. She is very slow and takes a long time to consider how to write a word after hearing it; but in copying from print there is very little delay.

11. Power of repeating words is limited to those with which she is familiar; long words she mispronounces, and knows that she does so; strange words she cannot pronounce at all until pronounced clearly and very often before her. No motor paralysis, no anæsthesia, or analgesia; thermal sense normal, as also reflexes.

*Patient's Statement.*—Says she is all right; has some difficulty

in explaining uncommon occurrences ; was unable to do any shopping for the first five months ; she knew the names of the things she wanted, but could not say them ; is slow in counting money ; can manage all the household duties perfectly well. After any prolonged mental work she says that she feels confused, and fails to understand things clearly. It was noticed that towards the end of the examination she confessed that she was tired thinking.

Another case was that of a patient admitted to the hospital three years ago, suffering at that time from impaired power of speech and locomotion, and I think it of interest to recall it now as affording several points of contrast with the two recently under observation. Mrs. S., aged thirty-five, when in the sixth month of her third pregnancy began to suffer from gradually increasing impairment and difficulty in speech and locomotion, for which she could assign no cause. These troubles increased, and were observable plainly at the time of her admission to hospital. Her labour ended in the birth of twins, unaided, and the convalescence was satisfactory, but not followed by any improvement in the points mentioned. She is now living in the country, and has given birth to another healthy infant. Her power of walking is so diminished that she is unable to leave her house, and her speech has the same halting character which first attracted my attention. Neither in the beginning of these troubles nor since has she suffered from headache or vomiting. Her articulation and choice of words are good, but she speaks, as she moves, with slowness and hesitancy.

The rarity of such cases is fully attested by the scanty notices of them in our medical literature, and even the small number here collected, both in their points of contrast and similarity, afford interesting evidence of varying phases and degrees of this affection.

Sir F. Bateman has recorded a very interesting case of a young woman who, during her second pregnancy, suffered from a gradually increasing loss of power in right arm and embarrassment of speech, which culminated in complete aphasia six days after delivery, which was natural and unattended by any unusual effort. The loss of speech was sudden, unattended by any loss of consciousness, and her appearance was as usual. Without developing any fresh

symptoms, she became gradually weaker, and sank from exhaustion six weeks after her confinement.

In the case of A. O'T., aged thirty-four, admitted to hospital 7th December, 1900, we have another example. When about seven months pregnant, and suffering from much fatigue and anxiety caused by the illness of her children, she became suddenly affected with impairment of speech, some confusion of ideas, and lessened ability for her ordinary work. To these troubles were added pain in the occiput. At the time of her admission to hospital the aphasia alone was observable. The mental faculties and power of locomotion were not manifestly impaired. The labour and succeeding puerperium were uneventful, and when leaving the hospital, about nine days after delivery, scarcely any defect in speech remained. She has been recently seen by me (fifteen months after the beginning of illness), and complains of nothing except slight occasional headache, and a confused feeling in her head if worried or overworked. I could detect no impairment whatever in the power of speech, and she is able to perform all her domestic duties just as before illness.

#### PULMONARY EMBOLISM.

CASE—E. M., aged thirty-four, 1-para ; admitted September 21 ; delivered same day ; labour lasted 15 hours ; the third stage 15 minutes. There was a tear of the vagina and a rent of the perineum, which was stitched. Her condition up to the 28th of September, when she was discharged, was quite normal. The involution of the uterus was good, and the healing of the lacerations quite satisfactory. While being driven home from the hospital, she complained of feeling faint and breathless, and she was taken to a tavern and given some whisky. As her condition did not improve, but rather grew worse, she was brought back to hospital, and readmitted about half an hour after her discharge. She was then cyanosed and gasping for breath, the pulse rapid and scarcely perceptible, and the extremities cold. The usual restorative measures were adopted, including the injection of strychnin and digitalin, the application of warmth to the extremities, &c. Examination of the chest showed a patch of dulness at the base of the right lung, and the other signs of pneumonia, and a little later there were distinct friction sounds audible over this area.

On the 2nd of October her temperature reached 103°4', and it



continued more or less elevated till October 12, when it was again normal. Her generally weakened and emaciated condition necessitated her retention in hospital till October 29, when convalescence was again established.

#### EMPHYSEMA.

CASE—B. C., aged twenty-nine, 1-para, was admitted on July 25, in labour. Her aspect was healthy, and her general condition was satisfactory. Though neither the pains nor the expulsive efforts of the patient were violent, emphysema of the connective tissue of the neck was observed when she had been some time in the second stage. Owing to this circumstance and undue slowness of advance, assistance was given with the forceps. The day following delivery the emphysema had extended to the lateral walls of the chest, and was observable till the seventh day. At no time was there any redness of the skin. The patient enjoyed a normal convalescence.

Johnston and Sinclair record seven cases of this affection, but this is the first I have noticed during my Mastership.

#### MISCELLANEOUS.

In one case where forceps was used for delay in second stage a healthy living infant showed extensive peeling of epidermis on arms, just as in a macerated foetus.

■ T. M., aged twenty-nine, 2-para; a healthy woman; had an unusually slow pulse—46–48 per minute.

J. C., aged twenty-eight, 5-para, suffers from sciatica in every confinement, pain coming on in left leg about an hour after delivery, and lasting for some days.

In the case of H. K., aged twenty-eight, 1-para, a foetid odour was observed in uterine discharge at time of delivery, the infant being alive and healthy. The curette was used, and brought away some foul-smelling clots from uterus.

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## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

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*A Dictionary of Treatment, or Therapeutic Index, including Medical and Surgical Therapeutics.* By WILLIAM WHITLA, M.A., M.D.; Professor of Materia Medica and Therapeutics in Queen's College, Belfast; Senior Physician to and Lecturer on Clinical Medicine, Royal Victoria Hospital, &c., &c., &c. Fourth Edition. London: Henry Renshaw. 1902. 8vo. Pp. 1,052.

ALL Irish physicians and surgeons must feel an honest national pride in the success which has attended this well-known and widely-appreciated Therapeutic Index. It is probably the most popular text-book on the subject in existence, and we heartily congratulate Dr. Whitla on the issue of his fourth edition. As the work was out of print for more than two years, its re-appearance will be hailed with satisfaction. Everyone who knows the thoroughness of Dr. Whitla's work will readily believe his statement that this edition has been thoroughly revised, brought up to date, and in great part re-written.

In regard to the articles on Surgical Therapeutics, the author has availed himself of the aid of Mr. A. B. Mitchell, F.R.C.S.I., Surgeon to the Royal Victoria Hospital, Belfast. The more important of this gentleman's additions are marked by his initials. He has re-written the section on Wounds, and his handiwork is also to be seen in the revision of the articles on the Operative Treatment of Gastric Ulcer and Cancer. In this department of surgery Mr. Mitchell has already achieved marked success.

To Dr. Cecil Shaw, Assistant Surgeon to the Belfast Ophthalmic Hospital, Dr. Whitla expresses his indebtedness for a careful revision of the articles on Diseases of the Eye and Ear. Help in the correction of the proof-sheets, and in the preparation of the very full index, with

which the volume closes, was afforded by Dr. Victor Fielden, the Demonstrator of Materia Medica and Therapeutics in Queen's College, Belfast.

In the article on Typhoid Fever we observe that Dr. Whitla has brought the war in South Africa to an end, for he speaks of it as "the late Boer War." He is alluding, of course, to the preventive treatment of typhoid fever by the injection of attenuated cultures of the *Bacillus typhosus*. From the published statistics he shows that inoculation very considerably diminishes the risk of catching the disease.

From the foregoing it will be seen that the learned author has spared no pains to make his book as complete and reliable as possible. Its widespread popularity is, perhaps, best shown by the fact that since the last issue in England the work has passed through two editions printed in the Chinese language at Hangchow.

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*A Treatise on Mental Diseases.* Based upon the Lecture Course at the Johns Hopkins University, 1899, and designed for the use of Practitioners and Students of Medicine. By HENRY J. BERKLEY, M.D.; Clinical Professor of Psychiatry, the Johns Hopkins University: Chief Visiting Physician to the City Insane Asylum, Baltimore. With Frontispiece, Lithographic Plates, and Illustrations in the Text. London: Henry Kimpton. 1901. Pp. xvi., 575.

WE have long held that one cause of the difficulty experienced in obtaining a grasp of mental diseases from text-books is the fact that in most they are treated in a manner totally different to that adopted in the description of all other diseases. We are continually being told that mental phenomena are merely symptoms of physical disease of the nervous system. Yet these symptoms are thrust into such prominence that little attention can be given to physical symptoms and pathology, and the general conception formed is one-sided and unscientific. When, therefore, we understood that a work on Mental Diseases had been written by a man of Dr. Berkley's scientific

attainments we rejoiced in anticipation of better things, and in this expectation we have, upon the whole, not been disappointed. Strange to say, the pathological parts of the work are the least satisfactory, owing to the author's somewhat unbalanced adherence to the vascular theory of mental disease, and to his adoption of one or two generally discredited theories. But the subject is approached from the right standpoint, the clinical descriptions are generally good, and the physical symptoms and pathology receive their due share of attention.

The work begins with a short but adequate account of the anatomy and histology of the central nervous system, in which, we are surprised to observe, the author still describes an epicerebral space, a description which has long been abandoned by anatomists, including, we believe, His himself, who originated it; and he also pledges himself to the existence of an extra-adventitial lymph-space surrounding the cerebral vessels—another discarded theory. In dealing with the neuroglia, moreover, the author attributes a "scavenger" function to some of the Deiter's cells, a theory which no other neurologist of eminence, so far as we are aware, now adopts, with the exception of Dr. Bevan Lewis. There is a good description of the nervous elements, and we note that Dr. Berkley is a thoroughgoing supporter of the neuron doctrine, maintaining that the chief, if not the only, mode of communication between cells is "by the contiguity of the protoplasm of the distal extremity of the axone to the protoplasm of the extensions (gemmulæ) of the dendrites of the cell" body, a theory which his drawing from an actual specimen goes some distance to support.

Part II. deals sufficiently with the pathology of mental disorders, but contains some statements to which exception might be taken. Perhaps rather more importance is attached to the Golgi method in pathology than most authors are willing to allow, but this is natural from the author's large experience of that process. A somewhat disproportionate amount of space is assigned to the pathology of the cerebral vascular system, but a very interesting point is brought out—viz., the occurrence of abnormalities of the Circle of Willis in cases of insanity.

The third, and by far the longest, part deals with the clinical forms of mental diseases, commencing with sections on classification (in which the author wisely adopts the system of Krafft-Ebing, instead of following the too-prevalent custom of formulating a new one), and on General *Ætiology*, in the latter of which it is interesting to note that the author, speaking of the influence of race, gives it as his experience that "more frequent types of the degenerative forms of insanity" occur amongst negroes than in the whites. Chapters on General Symptomatology and General Treatment follow, and we observe that Dr. Berkley is no advocate of the "rest-cure," so strongly upheld by some Continental authorities, believing rather in the efficacy of fresh air and exercise, except in cases of physical weakness and in certain forms of melancholia.

The various forms of mental disease are then taken up and discussed at length, beginning with the "idiopathic" insanities, melancholia, and mania. Under the latter we find the too-sweeping assertion that "primary mania does not occur during or after the climacteric." Acute confusional insanity is described as a sub-variety of mania, and, curiously, secondary dementia is included amongst the idiopathic insanities.

Passing on to general paralysis, we find that in the author's opinion syphilis and heredity are the most important *ætiological* factors. As to the latter (regarding which he is not in agreement with the accepted opinion in this country) he bases his opinion rather on irregularities in the structure of the brains of general paralytics than on family histories. A "galloping form" of general paralysis is described, resembling acute delirium. As regards the pathology of the disease, the author is a strong supporter of the theory which makes the vessels its point of incidence.

Under the head of "Syphilitic Insanity" we find the surprising statement that "all cases under forty years of age that are hæmiplegic [*sic*] or monoplegic, with temporary or permanent mental disturbance, and in whom there are no indications of renal or cardiac lesion, are with us ascribed to syphilis, as are likewise many of the obscure dementias that occur between the twenty-fifth and fortieth years." This may be found a useful rule to go upon in treatment,

but it seems to us insufficient evidence whereon to base scientific statistics. The author does not appear to admit the existence of an early syphilitic meningitis, believing that the delirium at this stage is due to neoplasms in the vessels.

After giving an account of the psychoses of old age and those following gross cerebral disease, the author proceeds to deal with the "intoxication insanities," including under this head alcoholic and drug psychoses, which are well dealt with, though we miss the time-honoured variety, *mania à potu*, which is not even mentioned. The description of chronic cocainism is good, and, so far as our experience goes, accurate, and is followed by an interesting chapter on the rarer forms of drug intoxication. The insanities connected with child-bearing and lactation are classified as intoxication psychoses (which may in a general way be accepted, though they are not so in all cases), and so is, probably rightly, acute delirium. We are glad to see febrile deliriums described as well as the post-febrile insanities, for though Griesinger long ago pointed out that there is no essential difference between delirium and the other psychoses, text-books too often treat it as being of altogether another order. An interesting chapter on the autogenic intoxications, including uræmia, diabetes, constipation, gout, and others brings this valuable section of the work to an end.

We have next a section dealing with "The Insanities of the Psychical Degenerate," which opens with the best and most vivid description of paranoia which we remember to have met with. Next comes periodic insanity, and we are pleased to find that the author does not push this term so far as to include all cases of relapsing mania, as is done by Kraepelin. In this section it is stated that arterial pressure is high in periodic mania. Is this observation or an inference? Chapters on epileptic insanity and neurasthenic and hysterical psychoses follow, and a section is devoted to Idiocy and Imbecility, and to the Psychoses of Childhood, which, with an addendum on the relation of the Tropics to insanity, and a carefully-arranged index, brings the work to a conclusion.

Throughout, the pathology, when anything is known of it, is adequately, and sometimes lengthily, described, and treatment is sufficiently indicated. The author's style is good, though he sometimes shows an irritating love for Germanisms, and words which, to say the least, are unusual—*e.g.*, he speaks of "Brightic coma"! The assertions made are prone to be a little too positive at times, and if anything the work suffers, in common with some others, from excessive sub-division. But notwithstanding, and although one may not always agree with the author's opinions, the book is one of the best on the subject in the language, representing the views of a thoroughly scientific physician—views derived not alone from personal experience, but from a wide acquaintance with the literature of the subject. As such it may be confidently recommended to the advanced student.

The typography is beautiful, and the illustrations, some of which are in colours, are in general of a high degree of excellence.

*La Lèpre.* Par le DR. DOM SANTON. Avec planches hors texte et le figures en noir et en couleurs. Paris: C. Naud, Éditeur, 3 Rue Racine. 1901. 8vo. Pp. 196 and x.

THIS great monograph of over five hundred royal octavo pages is characterised by all the clearness and thoroughness to be found in French scientific works. We do not undertake a criticism of this work, which has occupied the author ten years, and is the outcome of a study of the disease on every Continent on the globe. But we desire to show our appreciation of the author's indefatigable labours, unceasing study, and careful observation of this dreadful disease. The literature of the subject is abundant, but with the exception of the Report of the Royal College of Physicians of London (1867), prepared for Her Majesty's Secretary of State for the Colonies, all of the works up to this deal with leprosy as it occurs in particular countries. We get views of the disease as it appears modified by the climate, food, and racial characters of the

victims. Some of the observers have studied on their voyage with preconceived ideas as to its ætiology, contagiousness and so-forth. What was wanted was a physician of unbiassed mind to visit every site of the disease, and observe and note facts, and show the influence of the environment and of the race on the disease. Dr. Dom Santon has done this. The task was a Herculean one, but it has been accomplished, though it took ten years, and necessitated the circumnavigation of the earth, and submitted the author to the cold of the Arctic regions and the glare of the unclouded sun of the torrid zone. When the toil of collecting the necessary information was completed the task of sifting all the evidence to form an opinion on the question: Is leprosy a morbid entity perfectly distinct from all other constitutional and skin diseases? had to be considered, and the further question: Is the leprosy of to-day the same as that of the middle ages? then called for study. This latter entailed the reading of a prodigious amount of literature, from the *Pentateuch* and the *Rig Veda Samhita* to the writings of Jeansclene (*La Presse Médic.*, 1900).

He commences by defining leprosy as “a general disease, special to man, which begins gently or violently, due to a pathogenic micro-organism, the bacillus of Hansen, and attended with very varying symptoms.”

The Arabs and the Greeks were not at one with regard to several forms of the disease—the elephantiasis of the Greeks they designated leprosy, and the leprosy of the Greeks they called psoriasis. Then follow the different names by which the disease is known in different countries.

He thinks that the home of the disease is to be found either on the banks of the Nile or on the Ganges. During their bondage in Egypt the Israelites contracted the disease, and from the clear clinical picture Moses gives of it there can be little doubt but that he was very familiar with its earlier stages. Yet, as the author says, Moses—not content with isolating the leper—isolated all that suffered from syphilis, psoriasis, and other infectious diseases. Moses was not giving a didactic lecture on dermatology, but as an officer of health was enforcing pre-



ventive measures. The account of the introduction of the disease into different countries is told in a most interesting manner.

We next get a description of the epidemics of leprosy in the middle ages. In this connection the author gives Renet's view that Astruc, the most distinguished physician and Semitic scholar of his day, credited Columbus with bringing syphilis from America. We do not know how this view arose. We do know that the principal Spanish historians call syphilis the "French" disease, and we cannot find in Astruc anything resembling the accusation. With Lancelotti we believe that "the origin of syphilis is lost in the night of time." Quoting from Gaddesden's "*Rosa Anglica*" the author goes to show that local syphilitic sores were not then differentiated from leprosy.

The geographical distinction of the disease is next dealt with, and an excellent map, on Mercator's plan, exhibits the infected areas of the world. Numerous photographs of the victims are given.

The important subject of the ætiology of the disease occupies the fourth chapter. He concludes that there is—(1) An hereditary infection during coitus, which results in an abortion; (2) an hereditary infection which is maternal and placental, which may (a) terminate in abortion, or (b) may give immunity (in conformity with the law of Colles). To infection of the fœtus by the mother he refuses the name hereditary, looking on the infection as a true contagion.

He looks on atrophic hereditary cases as too few for consideration, if they exist at all.

True characteristic leprosy does not, in his opinion, exist. Of the contagion he writes: It may manifest itself in all forms from "the subtilty of that of measles to the violence of furious rabies."

The bacteriology and anatomical lesions of the disease generally next come under consideration, and the chapter is beautifully illustrated with numerous coloured plates drawn from nature. Next the author gives the clinical history of the disease, and passes to the study of diseases which, either in symptoms or otherwise, resemble leprosy.

General pathology and symptomatology are next considered. The diagnosis, prophylaxis, and treatment next follow in the order named, and bring to an end this great monograph. And as we leave down the volume we think that, like Gibbon's great work, no person will ever again undertake afresh this gigantic task, which Dr. Dom Santon has done to his great honour for all that completeness of detail, independence of judgment, impartiality of decision, and lucidity of expression that makes a book valuable and most readable.

It brings fresh laurels to French medical literature, and we are glad to see it is dedicated to the memory of Pasteur—that French scientist who by his labours made the World his debtor.

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*A Laboratory Course in Bacteriology for the use of Medical, Agricultural, and Industrial Students.* By FREDERIC P. GORHAM, A.M.; Associate Professor of Biology, Brown University; Bacteriologist, Health Department, Providence, R. I. Philadelphia and London: Saunders. 1901.

THIS is really a very good, practical little book. In its 170 pages or thereabouts the beginner will find himself led step by step from the first focussing of the microscope to fairly advanced work. There are a number of useful illustrations. We do not wish to be understood as saying that with this book in hand a learner can get along unaided by the demonstrator. We do not think that any book could quite supply the teacher's place. There are many operations which might have been more fully described—operations which the beginner could never perform if he trusted solely to Mr. Gorham's directions. For example, on page 16, when giving directions for the examination of living bacteria in the hanging drop, he does not tell the student that he must focus the *edge* of the drop with the low power first before trying to see it with his immersion lens, nor does he give any directions for the use of the diaphragm with unstained preparations. We find no description of Weigert's most useful and constantly employed modifica-

tion of Gram's method. On the other hand, the book is distinctly "strong" in other respects. The various cultural characteristics of bacterial organisms are very fully described, and Chester's elaborate terminology is reproduced *in extenso*. There is a "Standard Chart" for bacterial analysis which will form a useful guide to those anxious to fully work out an unknown organism with a view to its determination, though we doubt whether it will often be filled up completely. Pages 95 to 116, comprising a mere list of names of various bacteria, might be left out, as they are quite useless. Their place might properly be taken by some account of the metabolic products of micro-organisms. A new and botanically interesting feature is the key on page 168 for the identification of the Yeast and Moulds that contaminate cultures. Taken as a whole, we can recommend the book to those who have at their disposal the assistance of a demonstrator.

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*Handbook of Bacteriological Diagnosis for Practitioners, including Instructions for the Clinical Examination of the blood.* By W. D'ESTE EMERY, M.D., B.Sc. Lond.: Lecturer on Pathology and Bacteriology in the University of Birmingham. London: Lewis. 1902.

THIS recent addition to Lewis's Practical Series is a very useful little book, giving in brief and lucid phraseology the necessary directions for collecting and working up material from various infective conditions, also for the making of nutrient media. It also contains two good plates illustrating preparations of various pathogenic organisms, as they appear when properly stained. We note that the author recommends, on page 38, a 4 or 5 per cent. watery solution of eosin, which is certainly much too strong; that he says nothing about "gonorrhœa-threads," and does not recommend the easy method of distinguishing doubtful gonococci by cultivation on blood-agar; that he omits all mention of the important bacteriology of urinary sediments; that he does not deal with the bacteriology of the fæces, although by modern methods it is possible to make the diagnosis of typhoid fever in this way at an earlier period than by any

other method. With these and a few similar reservations we can recommend the book to the class for which it is intended.

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*The Royal University of Ireland. The Calendar for the Year 1902.* Dublin: Alex. Thom & Co. 1902. 8vo. Pp. 485.

In its main features the Calendar of the Royal University of Ireland remains unaltered. The changes in the Courses and Regulations for 1903 will be found at pages 195 to 213 F. inclusive; those that affect the Faculty of Medicine at pages 213 E and 213 F. In the First Examination in Medicine there are a few alterations under the headings "Zoology" and "Experimental Physics."

In future Pathology will cease to form part of the Course for the Travelling Medical Scholarship in Anatomy and Histology.

*Medical Studentship.*—In October, 1903, there will be offered for competition among the Graduates in Medicine of the University one Medical Studentship, tenable for two consecutive years, of the annual value of £200.

Each candidate must send to the Secretaries a printed form of application for admission *accurately filled up and signed by the candidate*, together with the prescribed fee of £2, *not later than March 31*. Candidates at this Examination must answer in the following subjects:—I. Physiology; II. Physiological Chemistry.

The following are the particulars of the foregoing subjects of examination:—

*Physiology.*—The physiology of muscle, nerve, blood, lymph, lymphoid organs, circulation, digestion (including diet), and respiration: the elimination of waste products by the skin and kidneys, the metabolic processes of the body, the statistics of nutrition, the income and expenditure of the energy of the body, animal heat, the nutrition of the embryo, the physiology of the central nervous system, of the organs of special sense, of voice, and of reproduction.

*Physiological Chemistry.*—The chief chemical constituents (proximate principles, &c.) of the organism, the

methods employed in their preparation and identification, the extraction and subsequent analysis of the gases of the blood and of the secretions, fermentations and ferments, the chemistry of the tissues and organs of the body, of digestion, respiration, and of the excretions.

A practical examination will be held in—(1) Physiological Chemistry, (2) Experimental Physiology.

Great importance will be attached to this portion of the examination.

The papers set at the examinations in 1901 are published in a separate volume, which forms a supplement to the Calendar.

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*Guide to the Microscopic Examination of the Eye.* By PROFESSOR R. GREEF (of Berlin). Translated from the second German edition by HUGH WALKER, M.B. Glasgow. London: Rebman, Ltd. 1901. 8vo. Pp. 171.

IN this work will be found in essence the instruction which the author has been accustomed to give in his microscopic course, and an account of the methods which he has found to be most generally useful. Every ophthalmologist who uses the microscope knows that the eye, in virtue of its peculiar form and composition, demands treatment differing in many respects from that sufficient for organs which are more consistent and uniform in structure, and the precise relation of whose parts it is less important to preserve. There are, moreover, certain processes which are adapted for the demonstration of ocular structures solely. Further, the technique involved in the division of the bulb calls for special consideration. Many important points are not discussed in the various excellent handbooks on microscopic work, and although much is to be learned from these regarding general methods, the eye, as a rule, is treated briefly. Here for the first time, the author says, an attempt has been made to collect such matter as may prove specially useful to the ophthalmologist, and in almost every instance the methods described have been tested by the author personally.

This excellent little book is divided into two parts—the

“General Part,” which deals with the general subject, methods of fixing and hardening, imbedding processes, staining, decalcification, &c., &c.

The second, or “Special Part,” dealing with the various portions and structures of the eye, their anatomy, and the methods of demonstrating them, &c., &c.

We can strongly recommend this little book to those about to study the microscopic appearances and conditions of the eye.

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*The Sanitary Inspector's Handbook.* By ALBERT TAYLOR, Member of the Sanitary Institute, Holder of the Inspector of Nuisances Certificate of the Sanitary Institute, Demonstrator to the Students of the Sanitary Institute, Sanitary Inspector, City of Westminster; late Chief Sanitary Inspector to the Vestry of St. George, Hanoversquare, London; formerly Chief Inspector of Nuisances, Wigan; and Sanitary Inspector, Wallasey. Third Edition, with Illustrations. London: H. K. Lewis. 1901. Pp. 408.

We welcome the appearance of the third edition of this useful book. It is eminently practical, and deals with almost all the subjects which should come within the range of the Sanitary Inspector's knowledge. A feature of the book is the number of specimen report forms and examples of the methods of book-keeping which it contains. These should prove of much value to those seeking to become efficient Sanitary Inspectors.

Several pages are devoted to a synopsis of the provisions of the various Acts of Parliament which relate to the Public Health in England and Wales, Scotland and the Metropolis. Those which relate to Ireland have been ignored. This fact, in our eyes, constitutes the great defect of the book, and to a large extent spoils its usefulness.

The chapters on Meat Inspection, Slaughter-houses, and Dairy Yards are excellent. They deal very fully with subjects which are treated superficially in most of the textbooks read by candidates for the Diploma in Public Health, although of immense importance to the Medical Officer of

Health in the performance of his duties. Here again, however, we miss reference to the legal powers possessed by Sanitary Authorities in Ireland in such matters. We trust that in future editions, Ireland will not be passed over, and that Mr. Taylor's work, so completed, will find its way into the hands of many Sanitary Inspectors and Medical Officers of Health in this country, to whom it should prove a valuable assistance.

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*Directions for Class-work in Practical Physiology.* By E. A. SCHÄFER, LL.D., F.R.S.; Professor of Physiology in the University of Edinburgh. London: Longmans, Green and Co. 1901. 8vo. Pp. 76.

THIS little book is specially designed to accompany class-work in practical physiology, and represents, in a permanent form, the class notes used by the author for many years. The course covered consists of the physiology of muscle and nerve, the frog's heart, and some of the more easily performed experiments on the arteries and the central nervous system. The directions for performing, and the description of each experiment, though short, are very clearly given, and give a distinct value to the work over a mere syllabus. Any student working at these subjects would find the book invaluable, while teachers would find many hints from the concise directions for the performance of the experiments. Others might find interest in some of the chapters, but it will hardly find many readers outside the walls of a laboratory.

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*The Pathology and Treatment of Sexual Impotence.* By VICTOR G. VECKI, M.D. Third Edition. Revised and enlarged. Philadelphia and London: W. B. Saunders and Company. 1901.

A NEAT octavo of 329 pages on a subject of unquestionably surpassing interest! The attractiveness of the manner does justice to that of the matter. The author has undertaken to deal with a most delicate and far-reaching series of questions, the responsibility for the solution of which is,

as a rule, almost completely shirked by the authors of the usual "manuals" and "systems" of surgery. And he treats every part of his subject with the crystalline clearness of diction and the fearlessly outspoken candour of expression which so eminently characterise the professional literature of our trans-Atlantic cousins.

A good deal of moral courage is necessarily requisite for the production of such a volume as that now before us. As the author remarks in the preface to the first American edition: "When the first German edition of this work was published in 1889 there was some consternation in the ranks of old and young medical fogies, who were ignorant that any one dared to resist their intellectual tendencies, refused to worship their supernatural gods. The second German edition found the ranks of the same kind of professional formula-riders and bigots solid, though somewhat thinned. I have taken the liberty of preserving the independence of my altruistic opinions, and shall continue to fight against false and hypocritical quasi-scientific pretensions." And, having regard to the history of the progress of his work in the scientific world, we can well congratulate the author on the dignified position which he assumes in the concluding paragraph of the preface to the present issue: "May this new edition meet with the same success as the previous ones, and without a murmur we shall endure if it meets with the same enemies." For those of our readers who are still unacquainted with the volume we will mention that the text is arranged in ten chapters: "Introduction," "Anatomy," "Physiology of the Sexual Act," "Etiology of Impotence," "Forms of Impotence," "Diagnosis," "Prognosis," "Prophylaxis," "Treatment," and "Special Therapeutics."

The last two chapters are probably those which will in the end be found to have elicited the greatest diversity of opinion. He has obtained peculiarly gratifying results from the "suspension" treatment of various forms of paralytic and other less pronounced varieties of the condition dependent upon spinal and neural lesions or functional imperfections.

We cordially recommend this volume to the attention of



every medical practitioner. It deals thoroughly and sensibly with a special domain, of which none of us can now afford to remain in real or feigned ignorance.

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*Menstruation and its Disorders.* By ARTHUR E. GILES, M.D., B.Sc., F.R.C.S., M.R.C.P.; Surgeon to Out-Patients, Chelsea Hospital for Women; Gynæcologist to the Tottenham Hospital; and Obstetric Physician to the St. Marylebone Dispensary. Medical Monograph Series, No. 5. London: Baillière, Tindall & Cox. 1901. Pp. viii. and 100.

WE must congratulate Dr. Giles on the excellence of the little work before us. It is clearly written, well expressed, and full of just the kind of information which every medical man requires. Dr. Giles is a well-known authority on the subject on which he writes, and, consequently, his statements will be received with respect, even though at times they are—as he himself confesses—somewhat dogmatic. For ourselves, we are content to follow him in his comparison of menstruation in women with the period of the pro-œstrum in animals, but we fancy that many others will not do so. The effects of civilisation on the sexual instincts of the woman are so marked, and the changes which have occurred in the physical symptoms of these instincts are, in all probability, so extensive, that there is a natural difficulty in determining the relationship which exists between sexual processes in the human race and in other animals. Consequently, there is abundant cause for differences of opinion as to the exact nature of this relationship.

Dr. Giles imparts most valuable advice on the subject of the bringing up of girls, especially at the period of puberty—advice which is very necessary at the present day. We fear, however, that his remark that “in the majority of cases women require to be treated with an extra degree of consideration and indulgence during menstruation, whilst many are temporarily unfitted for arduous work or special exertion,” will not be appreciated by many of the sex which it is intended to benefit. The modern

woman does not like to be reminded of her disabilities, as the latter are at variance with the exigencies which circumstances, and other women, have forced upon her. Her neglect of them is one of the dangers that threaten the world at the present day, inasmuch as it more or less directly tends to produce a diminishing population, and, perhaps, a mentally and physically inferior race. It is, however, a question which will effect its own solution in the course of time, though the answer may be obtained at the expense of the comparative well-being of the next generation.

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*Burdett's Hospitals and Charities, 1902.* Being the Year-book of Philanthropy and the Hospital Annual. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press. 1902. 8vo. Pp. 1,087.

YEAR by year we have spoken with approval of this useful, nay indispensable, publication. The features of the present volume are in the main those which characterised its predecessors. Nevertheless, there are some changes. For example, Sir Henry Burdett has this year introduced, at page 707, a carefully selected list of sanatoria for the open-air treatment of tuberculosis, or rather of pulmonary consumption. In it the only Irish Sanatoria which find a place are Altadore, Kilpedder, Co. Wicklow, and Ros-trevor Sanatorium. Surely Rosclare Sanatorium, Irvines-town, Co. Fermanagh, should have been included?

Again, the Poor Law Infirmary Section (page 325) has been made complete by including every poor law institution which has a training school for nurses. In this list Ireland, we regret to say, finds no place at all. This, however, is not the editor's fault.

The book has been published with commendable punctuality this year. We received our copy on March 3.

As in previous issues, the failure of hospital authorities to furnish information in many instances detracts from the value of the Year-book. A glaring example is Saint Michael's Hospital, Kingstown, on the staff of which the names of the late Dr. M. A. Boyd and of Dr. D. E. Flinn,

now Inspector of the Local Government Board for Ireland, still appear. The National Children's Hospital, Harcourt-street, Dublin, is also a defaulter in the matter of furnishing information.

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*Elementary Bandaging and Surgical Dressing, with Directions concerning the Immediate Treatment of Cases of Emergency, for the Use of Dressers and Nurses.* By the late WALTER PYE, F.R.C.S. Revised by THOS. CAWARDINE, F.R.C.S. Ninth Edition. Bristol: John Wright and Co. 1901. Pp. 214.

THE present edition is the first which has appeared since the death of the author. Mr. Cawardine has made a number of additions, and has improved the illustrations, but he has wisely left the general plan of the work alone. No better manual of elementary bandaging and dressing is in existence.

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*A Text-book of Practical Obstetrics.* By EGBERT GRANDIN, M.D.; Gynæcologist to the Columbus Hospital, &c., &c.; with the Collaboration of GEORGE W. JARMAN, M.D.; Gynæcologist to the Cancer Hospital; Instructor in Gynæcology in the Medical Department of the Columbia University, &c., &c. Third Edition, Revised and Enlarged. Illustrated with 52 full-page Photographic Plates, and 105 Illustrations in the text. London: Henry Kimpton. 1901. Pp. xiv. and 511.

WE are sure that there are many people who will welcome the appearance of the third edition of Drs. Grandin's and Jarman's work on Obstetrics. As it has reached its third edition, it does not call for long notice. The greater part of the book is but slightly altered, but, at the commencement, chapters on the Female Organs of Generation and on Embryology have been added. The photographic reproductions of operations, stages of pregnancy, &c., are in most instances good. May we, however, suggest to the authors that the presence of portraits of operators is not an essential; that rather in most cases it partakes of the

nature of a blemish. A little less of the operator and a little more of the condition which it is desired to reproduce would, in the work before us, frequently be a change for the better. Plates XX. to XXIX. are exaggerated instances of this rather American failing—a failing which is as foolish as it is unnecessary. On the other hand, the book is wonderfully free from the many etymological atrocities which sometimes disfigure Transatlantic medical works.

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*Journal of the Scottish Meteorological Society.* Vol. XII.  
Third Series. No. XXVII. With Tables for the Year  
1899. Edinburgh and London: William Blackwood &  
Sons. 1902. 8vo. Pp. 114.

THERE is but one fault to be found with the Scottish Meteorological Society, and that is, the delay which occurs in publishing the yearly Meteorological Tables. Surely a number of the excellent Journal of the Society which contains the “Minutes of Meeting of Council of the Scottish Meteorological Society, held on 3rd March, 1902” (see page 2), might very well include the Abstract of Meteorological Observations in Scotland for 1900 at all events, if not for 1901. Instead of this we have only the abstracts for 1899. While we quite recognise the difficulty of bringing out in good time such a mass of figures as the “Abstract” contains, yet  $2\frac{1}{4}$  years is an unnecessarily long period to devote to the compilation. The remainder of the number before us is well up-to-date, and its pages are enriched by two papers from the pen of the *doyen* of Meteorology in Scotland, Dr. Alexander Buchan, the veteran Meteorological Secretary of the Society. Dr. Buchan contributes two characteristic statistical reports on Fogs and Storms as observed on the coasts of Scotland.

The only remaining original article is a note by Angus Rankin on the number of gales observed at the Ben Nevis Observatory in the thirteen years, 1884 to 1896, inclusive. The insertion of Meteorological Returns for the years 1896 to 1899 from Dr. Alex. Paterson, the Society's Corresponding Member at Hebron, Palestine, was authorised

by the Council of the Society, but these returns do not appear in the current number of the Journal. The niggardly way in which the British Government support scientific research is sadly exemplified by the fact that the invaluable observations at the high level Observatory on the summit of Ben Nevis, 4,407 feet above the sea, are kept going from year to year chiefly by private generosity. One gentleman alone—Mr. Mackay Bernard—has contributed £500 a year for four years. On the other hand, the Meteorological Council have definitely notified that their grant of £250 a year to the Low-level Station at Fort-William will cease after the present year, 1902. Such a state of things is little short of disgraceful to the British Empire with its vast revenue and resources.

*Reports of the Society for the Study of Disease in Children.*  
Vol. I. 1901. Edited by The HON. SECRETARIES.  
London: Churchill & Co.

THIS is the first volume of the proceedings of a new Society devoted exclusively to the study of diseases of children, which was initiated by two members of the staff of the Evelina Hospital in May, 1900. In this admirable project, which is deserving of commendation, we cannot but regret that members of the staff of Great Ormond-street and the East London Hospitals were apparently not consulted on its foundation. One, therefore, cannot but deplore the loss to the Society of many of the highest British authorities on diseases of children, who, by a little tact, might have been enrolled as members. There are many striking omissions in the Three Kingdoms, and we think the Committee should take steps to bring their Society under the notice of these gentlemen.

There is here collected excellent material and a series of papers on these diseases which are deserving of study. The following are especially of value:—"Fibrous Nodules in an Infant," by Dr. Carpenter; "Primary Thrombosis of the Cerebral Veins and Sinuses," by Dr. Theodore Fisher; "Dyspeptic Asthma in Young Infants," by Wm. Ewart; "Muscular Atrophy in Children," by James Taylor and

T. H. Sequeira; "Infantile Scurvy," by Dr. Mackenzie; "Anæmia Pseudo-leukæmica Infantum," by Dr. Walter Carr; and so-called "Fœtal Rickets," by Dr. Ashby.

We think the cases exhibited are badly reported, and the details recorded are not sufficient to give proper information. This Society should do an amount of good, and we look forward to an increased membership, and the inclusion of many well-known high authorities on diseases of children who can powerfully influence the Society for good.

*The Technics of Nephropexy.* As an Operation *per se*, and as Modified by Combination with Lumbar Appendicectomy and Lumbar Exploration of the Bile Passages. By GEORGE M. EDEBOHLS, M.D., of New York; Surgeon to St. Francis's Hospital; Professor of the Diseases of Women at the New York Post-Graduate Medical School and Hospital. Pp. 51.

THIS is a reprint of a paper read before the Medical Society of the State of New York, October 15, 1901, and published in the February number of the *Annals of Surgery*, 1902.

Most of our readers are already acquainted with the views of Mr. Edebohls on movable kidney and the relations of right movable kidney to appendicitis. That any relationship exists between these two conditions as to cause and effect we have very strong doubts. There are very few women, especially those who have borne children, in whom a movable kidney could not be detected on the right side if carefully looked for, yet the frequency with which we see appendicitis in these cases is no greater than we see in those whose right kidney is not abnormally movable—if, indeed, so great. For demonstrating that the appendix can be readily and safely removed through the same incision in the ileo-costal space as is used to fix a movable kidney the author deserves credit, but we desire to point out that in most cases in which the appendix has been the seat of disease adhesions exist to such an extent as to render its removal through the opening in the loin a matter of extreme difficulty and danger in many cases, and

of absolute impossibility in others. This the author has, indeed, found out for himself in four out of 56 cases in which he attempted its removal. The author draws attention to the associations existing between movable right kidney and the various diseases of the bile passages, cholelithiasis, cholecystitis, &c. We know the great frequency with which cholelithiasis is met, and especially in women, while we have also pointed out the extreme frequency with which movable right kidney can be demonstrated. It is not then surprising that many cases of cholelithiasis and its results should co-exist with nephroptosis, but that they do co-exist is no reason for saying that nephroptosis leads to the production of gall-stones. It is, however, a point well worthy of notice that the biliary passages can be explored, and, if necessary, a calculus removed from either the gall-bladder or ducts through the same lumbar incision as is used to fix the movable kidney. The paper is one deserving of study by the operating surgeon, while the illustrations are good.

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*A Synopsis of Surgery.* By R. F. TOBIN, F.R.C.S.I.; Surgeon to St. Vincent's Hospital, Dublin; Examiner in Surgery, Royal College of Surgeons, Ireland; late in Charge Surgical Division, Royal Victoria Hospital, Netley; late Assistant Professor of Surgery, Army Medical School; Field Surgeon to the Suakim Expedition, &c. Second Edition. London: J. & A. Churchill; Dublin: Fannin and W. M'Gee. Pp. 278. 1902.

THE student, at any rate of the Dublin School, will hail with delight the appearance of the new edition of "Tobin's Synopsis of Surgery." That a second edition of this "note-book," as the author in his preface styles his synopsis, has been demanded so soon after its first appearance goes far to prove the success of Mr. Tobin's endeavour to place within reach of the student a short synopsis of so extensive a subject as surgery. The information and treatment, though very succinct, are well up to date. The interleaving adds greatly to the value of the book as a note-book, while the binding renders it attractive.

## PART III. MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

### ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

#### SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D., F.R.C.P.I.

Sectional Secretary—T. H. WILSON, F.R.C.P.I.

*Friday, February 7, 1902.*

The PRESIDENT in the Chair.

#### *Specimens.*

The following specimens were shown :—

1. The PRESIDENT—Uterus removed for fibro-myoma.
2. DR. HORNE—Large fibro-myoma removed by myomectomy.
3. DR. ALFRED SMITH—(a) An ovarian cystoma strangulated by twisting of the pedicle ; (b) A solid ovarian tumour with pyosalpinx.
4. DR. PUREFOY—(a) Concurrent uterine and tubal pregnancy ; (b) Large ovarian multilocular cyst removed soon after parturition ; (c) Two dermoid ovarian cysts removed from patient suffering from tuberculous peritonitis ; (d) Small ovarian cyst.

*Notes on a Laparotomy for an Ovarian Cystoma, which had ruptured six hours before removal, with Specimen.*

DR. ALFRED SMITH read the following paper :—Ovarian cysts may spontaneously rupture into the peritoneal cavity or into some neighbouring organs. The effect on the patient, of course, depends on the character of such a cyst, and of its contents. Innocent ovarian tumours generally produce but trifling symptoms, some pain and profuse diuresis being the chief disturbance. The



present case shows what grave symptoms and profound shock may follow spontaneous rupture of a common multilocular glandular cystoma. The author described the condition of the patient after operation, and dwelt on the points of special interest: (1) The cause of the spontaneous rupture; (2) the explanation of the toxic symptoms before operation; (3) the treatment of persistent vomiting after operation. Patient made a good recovery.

DR. KIDD asked had any food been taken by the mouth before the operation, and, if so, what was its character?

The PRESIDENT stated that he found rupture of ovarian cysts to be caused by tapping, particularly if the operation had been repeated. In one case, after laparotomy had been performed, the contents of the cystoma had escaped into the peritoneal cavity, and so much time was occupied by wiping the matter from the coils of intestines that the patient collapsed. He certainly preferred Dr. Smith's process of flushing out the cavity. Massage was also to be credited with causing the rupture of such tumours. He had seen the daily practice of massage diminish an ovarian cystoma to the vanishing point—the tumour had been ruptured and its contents rubbed out of the sac. Even gentle palpation has caused rupture. In the Adelaide Hospital, whilst very carefully palpating a tumour it burst, and at once he performed laparotomy. He found a malignant cystic tumour which he removed, and the patient recovered from the operation well, but some months after the disease recurred.

In reply DR. ALFRED SMITH stated that he looks on washing out the peritoneum as the rational method. Vomiting commenced from the moment of consciousness from the etherisation.

*Notes on a Case of Induction of Labour followed by Enucleation of Fibroid Tumour in Cervix.*

DR. KIDD had seen the patient when a little over four months pregnant, and thought it would be quite possible to deliver the patient without operating in case (1) that the tumour did not enlarge during further gestation; (2) that she came to Dublin again three months later; (3) that he was successful in inducing labour. Patient returned at the appointed time; having a large roomy pelvis and vagina, it was resolved to induce labour and attempt delivery. Labour was brought on by the introduction of a bougie between the membranes and the uterus. When the patient had been about thirty-four hours in labour the os was

sufficiently dilated to enable two fingers to pass easily through it. The patient was then examined with the whole hand in the vagina under an anæsthetic ; it was found that a tumour invaded more tissue than was at first deemed possible, so that the cervix could not possibly dilate sufficiently. Enucleation was resolved upon. This was done the same day under chloroform, and the cavity left by the tumour was partly stitched, then packed with iodoform gauze. About seven hours after the operation all uterine pains and contractions ceased, having lasted between forty and forty-eight hours and did not return for ten days, the os in the meantime closing very quickly, so that one could not introduce a finger. Owing to the packing of the cavity (where tumours had been) being left off too soon it filled again with blood clot and must have become infected by septic surroundings as the discharge from it became distinctly foetid ; this occasioned renewed packing and washing out. About twelve hours after her baby was born the patient got a severe rigor, and temperature went up to  $106.4^{\circ}$  ; this came down gradually with appropriate treatment in two or three days, the uterus remaining well contracted and free from pain, the lochia remaining of good quantity and colour, and free from any taint. Moreover, milk was established in the breasts, and she suckled her child successfully. She went home to the country with her child well within a month of the birth of the child. Dr. Kidd thought he was very fortunate to secure such a good result, but in future would advise an examination under an anæsthetic in the first instance. He would never undertake the responsibility except in a properly equipped hospital, whether private or public, and lastly, he would attempt the enucleation before resorting to the induction of labour. Dr. Kidd referred to the statistics of many operators and observers, and concluded by quoting the improved statistics published by L. Thumin in the *Archiv. für Gynäk.*, Vol. lxiv., No. 3, 1901, and referred to under the heading of "Current Literature" in the February number of the *Journal of Obstetrics and Gynæcology of the British Empire*.

DR. ALFRED SMITH thought Dr. Kidd would have had a better idea of what was to be done had he examined the patient under an anæsthetic. He (Dr. Smith) makes it a rule to examine under an anæsthetic before deciding on any course of action. He would argue against inducing labour. If easily enucleated, the labour might run to full term ; if not, there was the Cæsarean section.

When the tumour is situated at the upper portion of the lower segment, it is drawn up during the process of labour.

The PRESIDENT said that tumours of the cervix are very uncommon. He remembers Dr. Kidd's uncle (Dr. George Kidd) saying that he never saw one. When a tumour lies directly in front of the head he thinks it should be removed. "On and off" labours are not infrequent in cases of myoma. He had seen such an "on and off" labour continued for a fortnight.

DR. KIDD, in reply, stated that he quite agreed that an examination prior to deciding on the operative treatment is the proper course, but the conditions of this case were exceptional. The patient had a large roomy pelvis with a big vagina, which in the previous confinement had been lacerated and never repaired. Last year he had a somewhat similar case, in which, on the advice of the President, he did not operate, and the woman went to full term and bore a healthy living child; she was warned that if she again became pregnant she should come into the hospital not later than the seventh or eighth month. When next heard of the patient was in labour, and had been so for seventy-two hours. He put on the forceps and delivered her—during the operation he found that the tumour had flattened out, and the child's head successfully passed it without injury.

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#### SECTION OF STATE MEDICINE.

President—NINIAN FALKINER, M.D., D.P.H. Univ. Dubl.,  
F.R.C.P.I.

Secretary—F. C. MARTLEY, M.D. Cantab., D.P.H., F.R.C.P.I.

*Friday, February 14, 1902.*

#### *Presidential Address.*

The PRESIDENT gave a short sketch of the birth and progress of the history of notification of diseases in England, and presented a summary of the notification of certain infectious diseases in the cities of Dublin and Belfast, and the urban district of Rathmines and the Pembroke urban district, as published in the weekly reports of the Registrar-General for the year 1901. [The Address was published in the number of this Journal for March, 1902, Vol. CXIII., p. 177.]

MR. D. E. FLINN expressed regret that some districts in the Dublin Registration Area had not yet adopted the Notification

Act. Had the statistics of the whole area been available for analysis, the address would have been even more valuable. In his experience rural councils were more readily impressed with the value of notification of infectious diseases than urban councils, who seemed to see nothing in the Act other than increased expenses.

DR. THOMAS DONNELLY said that Sanitary Authorities shrank from the expense of preventive measures because they failed to recognise that the expenditure on prevention is practically nothing compared to that which an epidemic would entail. An account of the relative proportion between morbidity and mortality in cases of infectious diseases would be highly interesting and very valuable. Registration of death is at present very accurately carried out, but he feared that a considerable percentage of infectious diseases is not notified. Some, especially the medical officers of health, are very particular in notifying the diseases made compulsory, and many of them, like himself, voluntarily notify phthisis. As a rule, he finds that the poor, once they know the object in notification, raise no objection to the carrying out of the Act.

DR. F. C. MARTLEY considered that one of the principal difficulties they have to contend with is the getting of statistics. By writing to the medical officers and other officials of English working-class societies, he tried to learn something of the morbidity and mortality of such ; but in some the lives were so carefully selected by the medical officers that the results were inconclusive.

DR. CRAIG felt that phthisis should be included in the list of infectious diseases to be notified to the Public Health Authorities. Some years ago, some of the Corporation of Dublin officials gave him to understand that phthisis would be included, but it has not been. Many physicians notify the presence of the disease. But what good comes of it ? Some leaflets are sent to the infected house, and a coat of whitewash is applied, and then everything relapses into its old dirty insanitary condition.

DR. KIRKPATRICK thought that the public ignorance of the infectious nature of the disease is largely due to hospital physicians putting phthisical patients into general wards. Seeing this, the public cannot believe the disease to be infectious.

MR. H. G. CROLY said that if the members of the medical profession are convinced of one thing more than another, it is that phthisis is infectious. And one proof of the good such conviction does is the notice in tramcars prohibiting spitting—a habit be-

gotten of laziness. He fully approved the suggestion that phthisis should be included in the list of notifiable diseases. How much better prevention is than cure, is well shown by the good results attending re-vaccinations during the epidemic of small-pox twenty years ago.

DR. J. P. DOYLE would like to see syphilis included in the list of diseases to be notified—it is both contagious and infectious, and modifies all other diseases.

DR. MAGENNIS hoped Dr. Falkiner would continue to compile such statistics, as they would certainly benefit humanity and be helpful to sanitary reformers.

The PRESIDENT, in reply, said that phthisis was freely disseminated by patients in the last stage of the disease travelling about in public conveyances. Some years ago, in a paper read before this Section, he advocated the notification of primary syphilis. He would be glad to see the literature of the Tuberculosis Congress spread about. Medical men might give it a place on their waiting-room tables; the public must be educated to see the value of Preventive Medicine.

*Disposal of Surgical Dressings and other Refuse Matter in Hospitals.*

MR. H. GRAY CROLY read a paper on the above subject.

He considered that of the many surgeons who take every care of the dressings that are being put on their patients a very small percentage ask what becomes of the used dressings. When many years ago he commenced practice, poultices, tow, and used dressings were too often shoved down the closet pan, and not infrequently blocked the pipes. The closets were constantly being repaired. Then lazy nurses took to stuffing them into unused corners until the morning cleaning came about, when they were carried off to the dust-bin, to ferment and rot until a scavenger carted them off. The dust-bin was better than the closet, and the Corporation bucket was better than the dust-bin, but it was far from being what it should be. Every used dressing ought to be put into a covered bucket and carried out of the ward to a furnace, a quick-burning furnace, and then and there be incinerated. Lieutenant-Colonel Backhouse informed him that in the military hospitals of Calcutta, Madras, and Bombay, all used dressings are placed in a pail which has a concave perforated lid covered with fresh carbon, and are at once carried out beyond the hospital grounds and burnt

in a quick furnace. In the Rotunda Hospital and some others in this city the furnace is used, but it should be used in one and all of the hospitals. Aseptic wards are impossible if a rotting mass of dressings lies close by for twenty-four hours awaiting removal by the Corporation dustman.

MR. TOBIN considered Mr. Croly to be deserving of special thanks for his practical paper. Years ago, when he was in Netley, a farmer contracted for the hospital refuse, and utilised it as a top dressing for his land. On one occasion when hunting he was thrown in a field so manured, and fell into some of their old dressings. He asked could anything be more calculated to spread disease? There is but one way of disposing of used dressings—burning; all excreta, all used dressings should be removed from the ward without delay, and then burnt.

DR. POTTER, as one of the visiting committee of the Dublin Hospital Sunday Fund, said that now that he came to consider the evils of dressings remaining for the dustman's visit, he could no longer certify such a method as satisfactory to his committee. He was, however, not inclined to send bandages to the destructor; he thought it should be possible to wash and sterilise them.

DR. J. P. DOYLE did not think that modern used dressings were impregnated with infectious matter. Our wounds were aseptic, and there was no comparison between the modern dressing on its removal and that of the past; nevertheless, the Corporation dustbins were fruitful sources of disease, the lids were anything but close, and poor old women gathered round them raking their contents for cinders, and spreading such infection as they contained far and wide. Burning was not alone the best way, but was the only way of properly disposing of used dressings.

DR. CRAIG highly approved Mr. Croly's suggestion—it places the infected dressings beyond power of doing harm. There was no telling what might happen if used dressings were allowed to lie about. He knew an instance in which a used poultice that a careless nurse left lying about in a hospital ward was eaten by a child patient. There was the further risk of flies carrying infection from them.

The PRESIDENT approved Mr. Croly's suggestions. He thought the used dressings when in the bucket should be treated to a douche of sulphurous dioxide, which was now readily and cheaply obtainable. Of destructors, he looked on Scott's as the best; in half an hour you can get a heat of 400° F. The Section, he

thought, must acknowledge that Mr. Croly, in his simple and practical paper, had made a valuable contribution to Preventive Medicine.

MR. CROLY replied.

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### SECTION OF SURGERY.

President—THOMAS MYLES, M.D., P.R.C.S.I.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

*Friday, February 28, 1902.*

The PRESIDENT in the Chair.

#### *Living Exhibits.*

MR. JOHN LENTAIGNE—Case of excision of shoulder-joint by posterior incision (Kocher) for tuberculous disease of ten years' standing.

MR. HENRY GRAY CROLY—(a) Case of medio-tarsal amputation of foot (Chopart); (b) Case of amputation of foot at ankle-joint (Syme); (c) Fracture of olecranon process treated by wiring.

#### *Card Specimen.*

MR. HENRY CROLY—Gut showing numerous ulcers (dysenteric) with perforation and gangrene.

#### *Swallowing of Metallic Denture Successfully Treated by the Internal Administration of Cotton Wool.*

MR. G. JAMESON JOHNSTON read the following paper:—J. M., aged twenty, whilst swimming in the open sea was struck in the face by a wave. He immediately felt a choking sensation, was unable to swim on his breast, and made his way to shore by swimming on his back. Some of those on the shore slapped him on the back to displace the false teeth that he told them were choking him; the first slapping on the back produced dyspnoea. He got black in the face; a further slapping on the back got rid of the dyspnoea, though it caused him much pain. On admission to hospital a probang was passed, and the patient experienced so much relief that it was felt that the denture had passed into the stomach. Soon afterwards pains in the pyloric end of the stomach were complained of, and they continued for some days. Mr. G. Jameson Johnston then decided on treating him with sandwiches containing a thin layer of cotton wool in each. A week after admission he got a drachm and a half of compound liquorice powder,

which acted as an aperient, and got rid of the denture, which was found rolled in cotton wool in his fæces.

MR. LENTAIGNE confessed he would not like to take cotton wool under any circumstances. He thought it would not be without risk of producing obstruction. He considered the case important, as it impressed the well-known danger of small dentures on their notice. All the accidents resulting from artificial teeth getting into the pharynx are due to small dentures, which, he thinks, should be prohibited, for a large plate can be made for any case calling for artificial teeth.

MR. TOBIN would like to know if all the cotton wool the patient swallowed was passed with the denture.

MR. G. JAMESON JOHNSTON did not know the amount of wool either taken in the sandwiches or passed with the denture, the nurses having cleaned the latter before he saw it.

#### *Treatment of Senile Hypertrophy of the Prostate.*

MR. R. H. TOBIN traced the interdependence of the prostate gland and the testis and their correlation, and then considered the treatment of senile hypertrophy of the gland under the palliative and radical methods. In the former he placed great stress on the value of soft, flexible catheters and the necessity for their asepsis. In the choice of radical methods he pointed out the value of the presence or absence of sexual desires as an indication. If these were present, the case was probably one of true hypertrophy, to be treated by vasectomy or castration; if they were absent, tumours causing pressure-atrophy of the prostate probably constituted the enlargement, and enucleation would effect a cure. The failure of vasectomy in certain cases he considered to be due to the non-inclusion, in the resection, of the filaments of the hypogastric plexus that accompany the artery of the vas deferens, these being the most direct sympathetic link between the testicle and prostate. Of the radical methods he advocates complete enucleation of the gland, as practised by Mr. P. Johnston Freyer, of London.

#### *Suprapubic Prostatectomy.*

MR. E. H. TAYLOR gave a demonstration of the structure as well as of the normal and pathological anatomy of the prostate by means of a set of lantern slides and numerous specimens. He described the various steps of the operation of prostatectomy, and showed large adenomatous masses which he had removed. He pointed out that the aim of suprapubic prostatectomy should



be—1. To remove *en masse* and by a process of enucleation those portions of the enlarged lateral lobes which lie beside the urethra and exert a compressing influence upon it. 2. To remove the enlarged middle lobe in the same manner, seeing that its action in a large percentage of cases is to obstruct the bladder outlet. In his concluding remarks Mr. Taylor observed that suprapubic prostatectomy as practised at the present day remains in its essential details the operation of M'Gill and of the Leeds school ; it aims at enucleation of encapsuled growths, and meets all the requirements of the case. A remarkable paper appeared in the *British Medical Journal* some months ago, and another quite recently, under the authorship of Mr. Freyer, of London, in which he related certain cases of *total removal of the prostate and its capsule*. Mr. Taylor believed that Mr. Freyer is labouring under a grave misapprehension, and has overstated his case. His views on the structure of the prostate bear the impress of armchair and fireside reflection rather than of careful study in the dissecting room and histological laboratory. In fact, one cannot for a moment regard them in a serious light. Were total extirpation carried out what would it mean ? It would of necessity involve the removal of the prostatic urethra, to which there adheres in these cases a varying amount of prostatic tissue, and which remains connected with the common ejaculatory ducts. These, as has been already demonstrated, are displaced downwards and backwards with their surrounding tissue, and constitute important supports of the prostatic urethra after the adenomatous masses have been enucleated. Total extirpation would also imply the detachment from its surroundings of the interfibrous investment of the prostate, as well as of the thinned cortex. Now, this would be not only a totally unwarranted procedure, but in the highest degree dangerous, as it would inevitably mean the laceration of the veins of the prostatic venous plexus, which lie in close contact, embedded, one might say, in this interfibrous layer, which Mr. Freyer alludes to as the prostatic capsule. As a matter of fact, this fibrous layer is very tough, and it is very fortunate that it is, whereas the encapsuled masses are of a much softer and more friable consistency. The result is that when the finger is introduced through the incision in the bladder floor it finds its way, following the direction of least resistance, between the tough investment of the prostate or greatly thinned cortical layer and the encapsuled mass, and this is the true explanation of the ready

manner by which the enucleation of enormous tumours may be carried out. Mr. Freyer has done nothing more than remove encapsuled prostatic growths, and Mr. Taylor thinks that what he considers the prostatic capsule is in reality the thin fibrous investment by which these and adenomatous tumours in other regions of the body are surrounded. A glance at his illustrations alone will convince one of this fact. In conclusion, Mr. Taylor said that he was not blind to the fact that Mr. Freyer has done good work; he has, no doubt, extended the scope of McGill's operation, and in this respect he has succeeded in making a decided advance in this department of surgery.

The PRESIDENT congratulated the Section on the two most interesting papers they had just heard read. Mr. Taylor's was of surpassing interest. He placed his facts very clearly before them, and by his caution *re* extirpation he gave them great satisfaction. The operation is not generally applicable; it is possible in a few cases only. Cases in which the kidneys are diseased and the urine is purulent are not suitable for enucleation. An artificial pouch containing unhealthy urine in the immediate vicinity of the prostatic plexus is not a desirable condition. Where the urine is non-purulent and contains a normal amount of urea, and the patient is not too old or too feeble, the operation is applicable. In some of his cases he decided on suprapubic drainage. But the subject was one tempting to criticism, one on which a surgeon might talk for hours. He considered the operation much superior to perineal incision, from which he had seen a patient bleed to death.

MR. HENRY GRAY CROLY congratulated Mr. Tobin on his practical paper and Mr. Taylor on his anatomico-surgical paper, though he thought we were not so much indebted to German anatomists for our knowledge of the anatomy of the gland, as they had really added nothing to Alcock's description. We had, however, in the treatment of prostatic hypertrophy made great progress. A patient is no longer kept for hours in suffering whilst a catheter is being passed, and now patients do not die of uræmic poisoning from an over-distended bladder, as he had once seen occur.

MR. G. JAMESON JOHNSTON, in a case of marked hypertrophy of the prostate, which involved the whole gland and was readily recognised through the rectum, performed castration with good results. Mr. Taylor's splendid demonstration made it clear that the whole prostate could not be extirpated.

MR. TOBIN was thankful to Mr. Freyer for having so written as to produce Mr. Taylor's excellent paper and lantern demonstration. From *priori* reasoning it might appear that the operation was dangerous, but the good practical results showed that in spite of the reasons the operation was a valuable one. To the question, "Is the case fit for operation?" he would reply by asking, "Is the case fit to die?"

MR. TAYLOR felt sorry if he had roused Mr. Croly's indignation by not referring to Alcock's monograph, which he was aware had anticipated the German anatomists. Cases selected by him for operation are carefully fed, purged the day prior to operation, and he tries beforehand to bring their urine to the healthiest condition possible.

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#### THE AMERICAN ASSOCIATION OF UROLOGISTS.

THIS Association was organised on February 22, 1902, essentially for the purpose of further development of the study of the urinary organs and their diseases. Although most of the founders of the Association are specialists in genito-urinary diseases, membership is not limited to those engaged exclusively in this specialty. Thus gynæcologists, who embrace renal and vesical surgery in their work, are among the founders, as are also several gentlemen who devote themselves to the microscopy and chemistry of the urine, as well as a number of practitioners interested in the study of the kidney from a medical standpoint. The Association consists of active, corresponding and honorary members, and is in great measure modelled upon the plan of the Société Française d'Urologie, modified to suit American circumstances and conditions. Whenever possible, the Branch Associations throughout the United States, British Possessions, and Spanish America, will hold their meetings on the same evenings as does the parent Association in New York (the first Wednesday in each month). The work of the Association is principally clinical, for the demonstration of new methods in the technique of examination and treatment. The annual meeting of the American Association of Urologists will be held on the last day and the day following the annual meeting of the American Medical Association. The officers of the Association are:—Ramón Guiteras, M.D., president; Wm. K. Otis, M.D., vice-president; John Van der Poel, M.D., treasurer; Ferd. C. Valentine, M.D., secretary; A. D. Mabie, M.D., assistant secretary.

## SANITARY AND METEOROLOGICAL NOTES.

Compiled by SIR J. W. MOORE, B.A., M.D., Univ. Dubl. ;  
F.R.C.P.I. ; F.R. Met. Soc. ;  
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

### VITAL STATISTICS.

*For four weeks ending Saturday, March 22, 1902*

### IRELAND.

#### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending March 22, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 22·3 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, March 22, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Mar. 1	Mar. 8	Mar. 15	Mar. 22			Mar. 1	Mar. 8	Mar. 15	Mar. 22	
<b>22 Town Districts</b>	29·3	26·0	21·9	22·3	24·9	Lisburn -	36·4	50·1	27·3	41·0	38·7
Armagh -	20·7	0·0	13·8	18·8	12·1	Londonderry	15·4	24·3	32·0	19·2	22·7
Ballymena	52·7	33·5	24·0	4·8	28·7	Lurgan -	31·0	39·8	22·1	26·6	29·9
Belfast -	27·3	19·8	23·4	22·4	23·2	Newry -	16·6	8·3	4·1	24·9	13·5
Clonmel -	20·4	15·3	10·2	15·3	15·3	Newtownards	40·1	40·1	11·4	51·5	35·8
Cork -	31·6	32·3	25·4	24·0	28·3	Portadown -	20·8	31·1	10·4	31·1	23·4
Drogheda -	53·1	44·9	16·3	12·3	31·6	Queenstown	19·8	19·8	19·8	6·6	16·5
Dublin (Reg. Area)	28·6	29·7	20·6	22·4	25·3	Sligo -	38·4	0·0	9·6	52·8	25·2
Dundalk -	47·9	47·9	16·0	8·0	29·9	Tralee -	47·8	31·9	21·3	21·3	30·6
Galway -	54·4	46·6	46·6	38·9	46·6	Waterford -	27·3	11·7	15·6	9·7	16·1
Kilkenny -	39·8	44·7	29·8	9·9	31·0	Wexford -	46·7	46·7	32·7	23·4	37·4
Limerick -	19·2	16·4	15·1	20·5	17·8						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, March 22, were equal to an annual rate of 1·0 per 1,000, the rates varying from 0·0 in eighteen of the districts to 2·1 in Cork, the 35 deaths from all causes in that city including 3 from whooping-cough. Amongst the 154 deaths from all causes in Belfast are 5 from whooping-cough, 2 from measles, and one each from diphtheria, enteric fever, and diarrhoea.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 293,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, March 22, amounted to 198—104 boys and 94 girls; and the deaths to 167—78 males and 89 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 23·0 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the area, the rate was 22·4 per 1,000. During the twelve weeks ending with Saturday, March 22, the death-rate averaged 26·4, and was 5·6 below the mean rate for the corresponding portions of the ten years, 1892–1901.

Nine deaths from zymotic diseases were registered during the week under discussion. This number is equal to a rate of 1·2 per 1,000 of the estimated population, the average rate for the corresponding period of the past 10 years being 4·3 per 1,000. Two deaths were caused by influenza; measles, scarlatina, enteric fever, diphtheria, whooping-cough, and diarrhoea each caused one death.

Tuberculosis was the cause of 47 deaths, namely—from pulmonary tuberculosis, 36; from tubercular meningitis, 4; and from tubercular peritonitis one death. There were, moreover, 6 deaths from other forms of the disease. Cancer caused 4 deaths.

Diseases of the respiratory system, which had caused 41 deaths

in the preceding week, fell in the week ended March 22 to 30—of these 16 were due to bronchitis and 12 to pneumonia. This total figure is equal to a rate of 4.1 per 1,000 of the estimated population of the area, the average rate for the corresponding period of the past 10 years being 7.7 per 1,000.

Of 6 deaths ascribed to convulsions, 2 were of infants under one month, one was between the age periods of one month and one year, 2 were between the age periods of one year and 5 years, and one death occurred between the age periods of 5 years and 20 years. There was one death from apoplexy and 12 deaths resulted from other diseases of the brain and spinal cord (exclusive of convulsions); diseases of the circulatory system caused 13 deaths.

In 8 instances the cause of death was "uncertified," there having been no medical attendant during the last illness. These cases comprise the deaths of 7 children under one year old.

Forty-five of the persons whose deaths were registered during the week ended March 22 were under 5 years of age (25 being infants under one year, of whom 10 were under one month old), and 33 were aged 60 years and upwards, including 17 persons aged 70 and upwards, of whom 7 were octogenarians.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin, notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending March	1, 1902	..	..	75 cases.
"	" 8,	"	..	93 cases.
"	" 15,	"	..	68 cases.
"	" 22,	"	..	54 cases.

Of the 54 cases notified in the week ended March 22, 15 were erysipelas, 7 enteric fever, 5 scarlatina, 4 diphtheria, 11 measles, 2 continued fever, and 10 chicken-pox.

##### (2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending March	1,	1902	..	..	7 cases.
"	"	8,	"	..	0 cases.
"	"	15,	"	..	3 cases.
"	"	22,	"	..	4 cases.

Of the 4 cases notified in the last week, 3 were scarlatina and one erysipelas.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending March	1, 1902	..	..	63 cases.
"	" 8,	"	..	29 cases.
"	" 15,	"	..	43 cases.
"	" 22,	"	..	9 cases.

Of the 9 cases notified in the last week, 3 were measles and 6 whooping-cough.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

One case of small-pox was discharged from hospital, and one case remained under treatment at the close of the week ended Saturday, March 22.

Five cases of measles were admitted to hospital, 6 were discharged, and 20 cases remained under treatment at the close of the week.

Three cases of enteric fever were admitted to hospital, 11 cases were discharged, there was one death, and 40 cases remained under treatment at the close of the week.

Nine cases of scarlatina were admitted to hospital, 17 cases were discharged, and 70 cases remained under treatment at the close of the week.

One case of typhus remained under treatment at the close of the week.

Five cases of diphtheria were admitted to hospital, 8 cases were discharged, and 23 cases remained under treatment at the close of the week.

In addition to the above-named zymotic diseases recognised as such, 14 cases of pneumonia were admitted to hospital, 10 patients were discharged, and 26 cases remained under treatment at the end of the week.

## STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending March 1, 1902	..	..	51 cases.
" " 8, "	..	..	47 cases.
" " 15, "	..	..	54 cases.
" " 22, "	..	..	49 cases.

Of the 49 cases notified in the week ended March 22, 14 were enteric fever, 5 erysipelas, 7 diphtheria, 13 continued fever, 9 scarlet fever, and one membranous croup.

## ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, March 22, in 75 large English towns, including London (in which the rate was 18·8), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·7 per 1,000, the rate for Glasgow being 24·3, and for Edinburgh 22·2.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1902.*

Mean Height of Barometer	-	-	29·785 inches.
Maximal Height of Barometer (16th, at 9 p.m.)	-	-	30·196 "
Minimal Height of Barometer (24th, at 3 40 p.m.)	-	-	28·847 "
Mean Dry-bulb Temperature	-	-	45·4°.
Mean Wet-bulb Temperature	-	-	43·0°.
Mean Dew-point Temperature	-	-	40·3°.
Mean Elastic Force (Tension) of Aqueous Vapour	-	-	251 inch.
Mean Humidity	-	-	83·2 per cent.
Highest Temperature in Shade (on 17th)	-	-	58·7°.
Lowest Temperature in Shade (on 24th)	-	-	32·8°.
Lowest Temperature on Grass (Radiation) (24th)	-	-	29·4°.
Mean Amount of Cloud	-	-	63·3 per cent.
Rainfall (on 21 days)	-	-	1·752 inches.
Greatest Daily Rainfall (on 24th)	-	-	·366 inch.
General Directions of Wind	-	-	W., S.W.



*Remarks.*

Unlike March in the two preceding years, 1900 and 1901, March in 1902 was singularly mild—the mean temperature being  $3\cdot6^{\circ}$  above the average, and the only cold spell occurring between the 20th and the 26th, inclusive. At first also the weather was dry, but from the 8th onwards rain fell frequently, though not heavily, except on the 24th ( $\cdot366$  inch) and 26th ( $\cdot268$  inch). W. and S.W. winds were by far the most prevalent. Bright sunshine was estimated to last 94 hours, compared with  $132\frac{1}{2}$  hours in March, 1901, and only 84 hours in March, 1900. The daily average of bright sunshine was 3 hours compared with  $4\cdot27$  in March, 1901. A notable phenomenon was a sun-pillar which appeared on the late afternoon of the 6th in a thin stratum of cirriform cloud. It was still seen long after sunset, and was visible not only in Dublin but also in Cornwall and Wiltshire.

In Dublin the arithmetical mean temperature ( $46\cdot7^{\circ}$ ) was  $3\cdot6^{\circ}$  above the average ( $43\cdot1^{\circ}$ ). The mean dry-bulb readings at 9 a.m. and 9 p.m. were  $45\cdot4^{\circ}$ . In the thirty-seven years ending with 1901, March was coldest in 1867 and 1883 (M. T. =  $39\cdot0^{\circ}$ ), and warmest in 1893 (M. T. =  $48\cdot1^{\circ}$ ). In 1901 the M. T. was  $41\cdot9^{\circ}$ .

The mean height of the barometer was 29·785 inches, or 0·131 inch below the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·196 inches at 9 p.m. of the 16th, and fell to 28·847 inches at 3 40 p.m. of the 24th. The observed range of atmospheric pressure was, therefore, 1·349 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was  $45\cdot4^{\circ}$ . Using the formula,  $Mean\ Temp. = Min. + (Max. - Min. \times \cdot485)$ , the M. T. becomes  $46\cdot5^{\circ}$ . The arithmetical mean of the maximal and minimal readings was  $46\cdot7^{\circ}$ , compared with a twenty-five years' average of  $43\cdot1^{\circ}$ . On the 17th the thermometer in the screen rose to  $58\cdot7^{\circ}$ —wind, S.W.; on the 24th the temperature fell to  $32\cdot8^{\circ}$ —wind, S.E. The minimum on the grass was  $29\cdot4^{\circ}$ , also on the 24th.

The rainfall was 1·752 inches, distributed over 21 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was 2·061 inches, and the average number of rainy days was 16·5. The rainfall, therefore, was below, while the rainy days were above, the average. In 1867 the rainfall in March was very large—4·972 inches on 22 days. On the other hand, the smallest March rainfall was ·288 inch on 8 days in 1893. In

1900, only .963 inch fell on 13 days. In 1901 the rainfall was 1.784 inches on 17 days.

The atmosphere was more or less foggy in the city on 6 days—viz., the 5th, 6th, 13th, 14th, 16th, and 30th. High winds were noted on 10 days, only once reaching the force of a gale—on the 19th. Snow or sleet occurred on the 20th, 21st, and 24th; hail also fell on the 20th, 22nd, 23rd, 25th, and 30th. Temperature exceeded 50° in the screen on 23 days, compared with only 6 days in 1901, only 5 days in 1900, 19 days in 1899, 9 in 1898, 14 in 1897, 21 in 1896, 13 in 1895, 22 in 1894, 26 in 1893, and only 7 in 1892. It never fell to 32° in the screen. The minima on the grass were 32° or less on 5 nights, compared with 11 nights in 1901, 14 nights in 1900, 13 in 1899, 15 in 1898, 9 in 1897, 8 in 1896, 10 in 1895, 12 each in 1894 and 1893, and 25 in 1892. The thermometer never failed to reach 45°. A lunar halo was seen on the 15th, a solar halo on the 26th, and a "sun-pillar" on the afternoon of the 6th, from 5 to 6 20 p.m.

The rainfall in Dublin during the three months ending March 31st amounted to 5.114 inches on 43 days, compared with 5.656 inches on 46 days in 1901, 6.698 inches on 63 days in 1900, only 1.650 inches on but 32 days in 1891, and a twenty-five years' (1865–1889 inclusive) average of 6.411 inches on 51.0 days.

At Knockdolian, Greystones, Co. Wicklow, 1.660 inches of rain fell on 17 days. The corresponding figures for March, 1900, are 1.320 inches of rain on 14 days, and for 1901, 1.840 inches on 14 days. The maximal fall in 24 hours was .530 inch on the 24th. The total rainfall since January 1, 1902, equals 6.110 inches on 34 days, compared with 11.756 inches on 58 days in the first quarter of 1900, and 7.260 inches on 41 days in the same period of 1901.

Dr. B. H. Steede, M.D., D.P.H., reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 1.417 inches on 19 days, compared with 1.798 inches on 14 days in 1901, .892 inch on 12 days in 1900, and 1.054 inches on 9 days in 1899. On the 24th .384 inch fell, and on the 26th .340 inch. The total rainfall at this station from January 1 to March 31, inclusive, was 6.006 inches on 41 days, compared with 6.635 inches on 39 days in the first quarter of 1901, 10.631 inches on 57 days in that of 1900, 9.929 inches on 48 days in that of 1899, 4.767 inches on 40 days in that of 1898, and 10.086 inches on 57

days in that of 1897. The extremes of temperature were:—Highest, 57·0° on the 29th; lowest, 33·0° on the 24th.

The rainfall at Cloneevin, Killiney, Co. Dublin, was 1·50 inches on 21 days, compared with 1·57 inches on 17 days in 1901. ·94 inch on 14 days in 1900, ·67 inch on 9 days in 1899, and a seventeen years' (1885–1901) average of 1·778 inches on 15·3 days. The maximum in the 17 years was 3·59 inches in 1888, the minimum was ·26 inch in 1893. The heaviest fall in 24 hours was ·50 inch on the 24th. At this station the total rainfall since January 1 was 5·47 inches on 45 days, compared with a fall of 8·17 inches on 62 days in the first quarter of 1900, and one of 5·96 inches on 45 days in that of 1901.

Dr. Arthur S. Goff reports that at Lynton, Dundrum, Co. Dublin, rain fell to the amount of 1·98 inches on 18 days, compared with 2·20 inches on 13 days in March, 1901, the greatest daily rainfall being ·44 inch on the 24th. The temperature in the shade ranged from 57° on the 17th to 34° on the 24th. The mean shade temperature was 46·4° compared with 41·2° in 1901. Since January 1st, 1902, the rainfall at this station amounts to 7·02 inches on 43 days, compared with 6·71 inches on 40 days in the first quarter of 1901.

At the Railway Hotel, Recess, Connemara, Co. Galway, the rainfall was 5·860 inches on 20 days, compared with 4·295 inches on 14 days in 1901, and 1·311 inches on 13 days in 1900. The maximal falls in 24 hours were ·770 inch on the 20th, and ·700 inch on the 23rd. Hail fell on the 19th and two following days, and on the 22nd there was a brief but heavy snowstorm, followed by sleet and rain.

Dr. J. Byrne Power, F.R. Met. Soc., D.P.H., Medical Superintendent Officer of Health, Kingstown, Co. Dublin, reports that at that station the mean temperature for March was 46·8°, the extremes being—highest, 60°; lowest, 33·5°. At Bournemouth the mean was 45·9°, the extremes being—highest, 61°; lowest, 31°. The mean daily range was 10° at Kingstown, and at Bournemouth 12·3°. The mean temperature of the sea at Sandycove bathing-place was 45°. The rainfall at Kingstown was 1·57 inches on 18 days, and at Bournemouth it was 2·27 inches on 10 days. The duration of bright sunshine was 103·8 hours at Kingstown, 102·8 at the Ordnance Survey Office, Phoenix Park, 85·7 at Parsonstown, 96·8 at Valentia, 100·7 at Southport, and 115·6 hours at Eastbourne.

## PERISCOPE.

### ORCHITIS AND EPIDIDYMITIS IN TYPHOID FEVER.

DR. FRANCIS P. KINNICUTT, of New York, records in the sixteenth volume of the *Transactions of the Association of American Physicians* (Philadelphia, 1901) the clinical histories of two cases of these rare complications or sequels of typhoid fever. The first case was that of a man, aged twenty-four years, admitted to hospital on January 30, 1901, apparently on the 7th day of his illness. The Widal test gave a positive result three days later. Both morning and evening temperatures were normal on the 23rd day. Five days afterwards the temperature rose to  $101^{\circ}$ , slight pain occurred in the right groin, and what seemed to be a swollen gland could be detected. Next day this proved to be the cord, enlarged, hard, and tender, in the inguinal canal. The following day the swelling reached the external ring, and twenty-four hours later the epididymis and testicle became engaged. A coincident phlebitis involving the long saphenous vein kept up the temperature until the 11th day. The second case was that of a man, aged thirty-four, admitted on December 18, 1900, on the 14th day of his fever—Widal test positive. The fever ceased on the 24th day, but there was some kidney and bladder trouble. On January 14, 1901, the evening temperature rose to  $101^{\circ}$ , and the patient complained of pain in the right testicle. On the following day the scrotum was reddened, the epididymis and testis were greatly swollen and acutely sensitive. The cord was apparently not implicated. The inflammatory symptoms rather rapidly subsided, and the patient was discharged on January 30. He was re-admitted on February 26, with fluctuation perceptible at one point over the right testis proper. A small amount of pus was drawn off by aspiration at the point of fluctuation. In the pus bacteriological examination demonstrated the presence of Eberth's bacillus in pure culture. Orchitis or epididymitis occurring as a complication or sequel of typhoid fever was first alluded to by Velpeau in 1844. An incomplete case was reported by Chedevergne in 1868, and the first complete case was reported in 1873. Westcott, in 1898, had collected thirty-two cases, and in the same year Eshner, after a thorough search through the literature, was able to find only forty four cases, which have been

analysed by him in an interesting paper. The rarity of the lesion is also indicated by the fact that in Pierre Do's *Thèse de Lyon*, 1899-1900, on "Epididymo-orchitis of Typhoidal Origin," the statistics of complications occurring in 14,738 cases of typhoid fever, drawn from French and German sources, show no record of any instance of epididymitis or orchitis. In Osler's series of 829 cases of typhoid fever, published in 1900, orchitis or epididymitis was observed in only two instances, both unattended with suppuration; and in the 889 cases treated in the Presbyterian Hospital from 1892 to 1901 in Dr. Kinnicutt's colleagues' services and his own, this lesion was noted only in the two instances related in the present paper. It is probable that the frequency of this complication is greater than the statistics indicate. Apart from cases which presumably have not been reported, the fact that in the forty-four cases collected by Eshner five occurred after the second week of convalescence—one of these as late as the ninth week—suggests the presumption that cases occur in which the true origin of the orchitis is not suspected. Dr. Kinnicutt arrives at the following conclusions:—1. Epididymitis or orchitis is a rare complication or sequel of typhoid fever, and is of typhoidal origin. 2. Only very exceptionally is it due to secondary microbic infection. 3. It develops at a late period in the disease or during convalescence. 4. The lesion, although as a rule unilateral, may be bilateral, and involves either the epididymis or testicle, or both, and not infrequently the cord. 5. Effusion into the tunica vaginalis is rare. 6. Termination most frequently is by resolution. 7. Suppuration occurs in 25 per cent. of all cases. 8. Localised necrosis and extrusion of testicular tissue are not uncommon. 9. Exceptionally there is destruction of the entire testicular structure. 10. Atrophy of the testicle occurs, but is a rare sequence. 11. The lesion gives rise to little constitutional disturbance. 12. Death as a direct result of the lesion has not been noted.

In the number of this Journal for February, 1892 (Vol. LIII., No. 2, third series, page 97), will be found an admirable paper by Dr. (now Sir) George F. Duffey, on "Rheumatic Orchitis as a Sequel to Fever." Sir George Duffey observed eighteen cases in men of the 1st Battalion of the 24th Regiment while quartered in Verdala Barracks, at Malta, during the autumn and winter of 1867. In none of the cases was there the slightest evidence or suspicion of any previous gonorrhœa.

With four exceptions all the patients had been previously under treatment for "fever"—the enteric fever of Malta. Some had been discharged, and were shortly afterwards re-admitted for the orchitis; others were attacked while still under treatment in hospital. The attack was generally sudden in its invasion. The epididymis, cord, and tunica vaginalis often shared with the testicle in the inflammation. Suppuration occurred in one case.

#### DIGITALIS AND OPIUM IN PNEUMONIA.

SIR WILLIAM T. GAIRDNER has addressed to the Editors of the *Glasgow Medical Journal* an important letter, which was published in the number of that Journal for April, 1902. It had reference to a discussion on pneumonia which has recently taken place in Glasgow. Sir William Gairdner was unable to attend and take part in that discussion. He writes his letter because that on two definite topics, alluded to in the discussion, there seems to be a risk of his opinions being either misunderstood or insufficiently supported. We quote Sir William's own words:—

"1. The one of these which is, perhaps, of minor importance is (in the words of Dr. Adam, *Glasgow Medical Journal*, p. 202) that 'Sir William Gairdner used to maintain that it [digitalis] was a poison in pneumonia.' No doubt there is some confusion here; for, as a matter of fact, I have rarely employed digitalis in the treatment of pneumonia; not because I had any special dread of the effects of moderate doses, but because I never met with any evidence or arguments leading to the expectation of good results. Dr. Adam, in attributing this adverse opinion to me, admits that he has not 'any very rational grounds' for giving digitalis; yet (he goes on to say) 'I always give it.' This absence of 'rational grounds' has operated on my mind in exactly the opposite way. I believe it would be almost the truth to say that I have never given digitalis in uncomplicated pneumonia; nor yet, probably, in any other febrile disease, *as such*. What may, however, have been in Dr. Adam's mind is that I have protested (see *Glasgow Medical Journal*, September, 1878) against the use of enormous doses of digitalis and of veratria as anti-pyretics in typhoid fever. To this I adhere. Digitalis in doses of 11 to 22 grs., and veratria in doses of one-twelfth of a grain every two hours, *until decided nausea or vomiting ensues*, are poisonous, and would be poisonous, no doubt, in pneumonia as much as in typhoid fever, in which latter disease they have been

now abandoned, I believe, even by those eminent German authorities by whom they were recommended before 1878. But that is no reason why *digitalis* should be regarded as 'a poison in pneumonia' in lesser doses; nor do I remember ever saying, or printing, anything which could be so construed. 2. On the other hand, Dr. Ness is amply justified in presenting it as a part of my teaching, founded on experience, that, in a general way, and allowing for exceptions, I 'regard opium as a drug of extreme danger in pneumonia.' I am aware that men of great eminence have taught otherwise. But, in so representing the case, I am not advocating any theory, but rather am dealing with facts which I know to be true, and which, if true, are such as ought to be in the mind of every practitioner. I have repeatedly seen what can only be regarded as poisonous effects from very moderate doses of opium in certain stages of pneumonia; and (especially towards the crisis) have learned to dread it more than almost any other drug. One case of this kind occurred some years ago in the Western Infirmary, and might well have been published at the time, by way of caution, had I not been anxious to spare the feelings of my excellent assistant, who (if I were to name him now) would be recognised by every Glasgow student of that time as one of the best men in the profession, whose premature death, some years later, was the cause of universal and deep regret. The case in question was this: A man in the prime of life, and otherwise quite sound, had acute pneumonia of the lower lobe of one lung, which was running an average course, up to (I think) about the sixth or seventh day from the rigor. I had left him in a fairly good condition, but with considerable pain, which increased during the night. Next morning he was cyanotic, with slow, intermittent breathing, and a very feeble, unsatisfactory pulse. His pupils were somewhat contracted. 'Has he had any opium?' I immediately asked. 'Yes, one-sixth of a grain of morphia, hypodermically injected, for the pain.' The whole scene was such as, I am sure, will never be forgotten by those who witnessed it. My poor assistant was almost thunderstruck, but there was no time to be lost; and by the usual means we just managed to pull the patient through a most perilous crisis, after which he recovered without any relapse or any further incident. Now, this is a fact to be related, apart from all hypothesis. And yet, it is not at all difficult to find a legitimate theory to fit in with, and account for, the fact. In pneumonia, far more than in pleurisy, more even than in bron-

chitis, the safety of the patient depends upon the respiratory nerve-centres being kept, as it were, wide-awake. The greatly accelerated breathing—'accelerated without being laborious,' as I used to point out as a rule—is practically at once the index of the danger, and the means by which Nature compensates for the restricted area of lung within which the air can meet the circulating blood. If then, when the respirations are 60, or even 50 or less, in the minute, the respiratory nerve-centres are sent to sleep by a potent narcotic, is it not obvious that the influence exerted at a critical time must be unfavourable? But opium is of all narcotics the one that tells most rapidly on the respiratory nerve-centres, and thereby not only on the reflexes dominating the overt respiratory acts, but on all the more latent reflexes which are concerned in what I have constantly termed the 'scavenger action' \* of the bronchial tubes, due to their circular muscles. In the above case (as in others which I have witnessed) all this essential machinery, working at high pressure to keep the patient in life, is brought to a comparative standstill, while the disease is still proceeding, or at least not retreating. Can we wonder at the result? I give this theory tentatively, not dogmatically; but of the facts I am absolutely sure, as above stated. If strychnine and the older remedy, antimony (as to which I must even now speak with caution), are good for anything in these circumstances, it is because they tend to keep these respiratory reflexes in full operation, which even a moderate dose of opium would paralyse or abolish.

“W. T. GAIRDNER.

“EDINBURGH, 19th March, 1902.”

#### WOMEN AS SURGEONS.

At the annual meeting of the New Hospital for Women, Euston-road, London, N.W., held recently, Sir Thomas Smith, consulting surgeon of St. Bartholomew's Hospital, referring to the surgical work done at the New Hospital, said that unfortunately his education and capacity did not justify him in speaking of the acknowledged reputation of the medical staff of that hospital,

\* See the *Glasgow Medical Journal* for July, 1863, p. 129, and especially p. 135 ff., “On the Action of Expectorant Remedies.” The use of the phrase “scavenger muscles,” as applied to the circular muscles of the bronchial tubes, is taken from earlier papers “On the Pathological States of the Lung connected with Bronchitis and Bronchial Obstruction,” in the *Edinburgh Medical Journal* for 1850–51.



but he was qualified to say a word or two about their surgeons, and he might say that that hospital had given them an opportunity of testing their capacity for performing and carrying to a successful issue all the most important operations that were performed on womankind. That test had been applied, and the result had been that they had gained there a reputation for good surgery. They had dissipated all prejudice which existed before, and they had now a sound reputation. There had been attended at that hospital upwards of 1,900 cases of maternity. Up to within a short time of that meeting he could have said that among those 1,900 cases there had been no deaths, but in view of that meeting of course a death took place. But he might mention that that death could in no way be connected with maternity. So really they had 1,900 cases of maternity attended from that hospital without a death. He was informed that what was called the normal fatality of those cases was one in 500. That in itself was an enormously improved result compared with what it was before the antiseptic method was introduced. In the aggregate 577 major operations were performed there with a mortality of under 6 per cent. He had been allowed personally to attend the operations in the operating theatre of that hospital, and he had very great pleasure in stating that he had nothing but admiration to express for the great dexterity and celerity with which the operations had been performed. He would not be discharging his duty if he did not refer to the admirable discipline and excellent training of the nurses in the operating theatre.

#### VOMITING OF PREGNANCY.

W. McKEOWN (*Dominion Medical Monthly*, Toronto, February, 1902) believes that severe vomiting of pregnancy is much more frequently toxic than is generally recognised. The development of the fetus must throw into the maternal circulation products not present at other times, and which may produce the severe and dangerous forms of vomiting met with, and to which the term "pernicious" has been applied. He cites a case in which the fetus had been dead for at least two weeks, during which time vomiting instead of abating increased in severity, and the patient's general condition became rapidly worse.

# THE DUBLIN JOURNAL

OF

## MEDICAL SCIENCE.

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JUNE 2, 1902.

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### PART I.

#### ORIGINAL COMMUNICATIONS.

ART. XV.—*A Series of Cases illustrating the Influence of Utero-Ovarian Trouble in the Production of Intestinal Obstruction.*\* By JOHN STEPHEN M'ARDLE, F.R.C.S.I.; Surgeon and Lecturer on Surgery to St. Vincent's Hospital; Assistant Professor of Operative Surgery, C. U. I.; Consulting Surgeon, Children's Hospital, Temple-street; Consulting Surgeon, National Hospital, Holles-street; Member of Council, Royal College of Surgeons, Ireland. (Illustrated.)

CASE I.—Mrs. K., aged twenty-seven, fourth pregnancy, menstruation irregular since birth of last child ten months ago; last menstruation, December 15th, 1901. Towards the end of December, 1900, when about three months pregnant, she was lifting a weight when she felt something snap in the right iliac fossa, followed by great pain. She had to crawl to bed. Had an attack of intestinal obstruction then, and was laid up for four months. She frequently suffered from pain in right iliac fossa, the pain being very severe at times (any jolting, such as driving, increasing it), and often producing vomiting. The pain usually shot out to back and down right leg. Constipation had always been marked, with great pain when the bowels acted. She was under treatment for what was supposed to be a displaced kidney, and this had been pushed up out of the pelvis of late on four different occasions. The last occasion was on April

\* This Series of Cases will be continued in future numbers of the Journal.

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23rd, 1902, when reposition caused intense pain, which was followed by faintness. She went home, but the pain continued, becoming severer on the 24th. On the night of the 25th she was in great distress, and vomiting set in. The abdomen now became distended, and on Saturday, 26th, the pain was so great that she was obliged to be kept under the influence of morphia. Symptoms of intestinal obstruction supervened, and on Monday, 28th, it became necessary to perform a laparotomy. This I carried out in the Private Hospital, No. 10 Holles-street, assisted by Drs. Horne, Leyburne, and Reginald White. Believing that the tumour was of pelvic origin, and that the obstruction was due to some adhesions to the ileum and cæcum, I opened the abdomen in the right semilunar line. During this procedure there was a great deal of bleeding from the abdominal wall, as is usual when adhesions are present. On entering the abdomen I found the omentum massed in front of a rather firm tumour, which seemed fixed in the right iliac fossa. On separating the general omental attachments, I found one very rigid cord (shown at A, Fig. I.) passing from the under surface of the omentum near its root, and twisting four times around the pedicle of a blackish, rounded mass, which occupied the position shown at B, Fig. I.

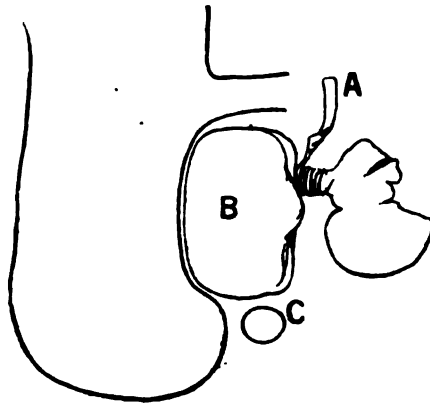


FIG. I.

- A. Strangulating band.
- B. Tumour.
- C. Section of appendix.

The projection on the right is the Fallopian tube and ovary.

The tumour was adherent to the end of the ileum, and was surrounded by, and adherent to, the cæcum and the appendix, which latter is shown in section at C, Fig. 1. The adhesions, being recent, were easily broken down, and the tumour brought out through the abdominal wound. It proved to be a fluctuating tumour in the end of the Fallopian tube, simulating an extra-uterine foetation. The ovary, somewhat enlarged and very vascular, lay just below, and internal to, the mass. I applied a double ligature to the broad ligament so as to leave the stump, after resection of the tumour, as short as possible. I ablated the ovary, as it could be of no further functional use. The uterus was found greatly enlarged, and corresponding to the pregnancy noted above. All the neighbouring tissues appeared quite healthy. I placed the cæcum in its normal position, and closed the abdominal wound by a few sutures. After operation she was very restless and complained of intense pain. This soon subsided under the influence of codein, and on the 1st of May she quickened, so that, notwithstanding the grave operative procedure, her pregnancy has not been interfered with. The stitches were removed on the 7th day, and the patient is now quite well.

The interest in this case lies in the fact that the tumour here mentioned had been looked upon as a floating kidney, and that we have an accurate history as to how it became strangulated by a band which, under ordinary circumstances, should be innocuous. Her gynæcological attendant, desirous of protecting her from a serious surgical procedure, and at the same time wishing to keep the tumour out of the pelvis until that cavity had become filled with the uterus, always relieved her distress by pushing the tumour above the pelvic brim. At each disturbance of the tumour from the pelvis it was pushed over the band alluded to; then, gradually sliding behind the band, it soon assumed its old pelvic site. Then, again, pain recurred, and in the effort to relieve it the tumour was again elevated, only to again fall behind this very rigid cord, which ultimately strangulated it after four such efforts. It was the strangulation of the tumour which led to the faintness; then to the localised peritonitis which caused adhesions; and lastly to the intestinal obstruction for which I operated. The specimen

is of such interest that I make no apology for here presenting a photograph of it (Fig. II.) as it now is, hardened in formalin.

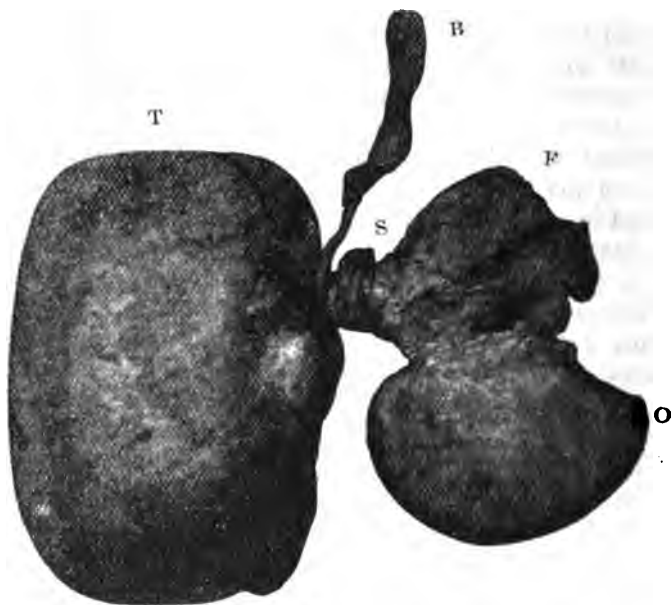


FIG. II.

TUMOUR AND PARTS REMOVED IN CASE OF ACUTE INTESTINAL OBSTRUCTION.

B. Omental band twisted on itself so as to make a tense cord.

S. Four coils of band strangulating tumour.

T. Tumour in end of Fallopian tube.

F. Fallopian tube.

O. Ovary.

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ART. XVI.—*On Dissociation, and the Ionic Hypothesis, as Applied to Medicine.* By WALTER G. SMITH, M.D.;  
Ex-President R.C.P.I.; Physician to H. E. the Lord  
Lieutenant; Physician to Sir Patrick Dun's Hospital.\*

(Continued from page 332.)

“IONS” are the boats which carry the electrons (electric charges) backwards and forwards through the solution.

Ionisation—i.e., the separation into ions—is effected by

\* Read before the Dublin Biological Club, Tuesday, April 8th, 1902.

the mere act of solution in water. The wandering or migration of the ions to their respective electrodes represents to us that which we call a galvanic current in an electrolyte. The velocities of the ions are very small even under the influence of a strong E. M.F., and the particles move in a second only through a few hundredths or perhaps  $\frac{1}{10}$  of a mm.

In general it may be said that the only substances which exhibit conductivity in solution in any marked degree are either salts, acids, or bases.

We have three classes of compounds:—

- I. Strongly ionised (over 50 per cent.) compounds = good electrolytes.

*E.g.* Strong acids—"Normal"\* HCl has a conductivity 200 times greater than normal acetic acid.

A normal solution of HCl has 75 per cent. ions.

A  $\frac{1}{10}$  normal solution has 86        "

A  $\frac{1}{1000}$  "        "        98        "

Strong bases—

Nearly all salts, whether of strong or weak acids (or bases).

Normal potassium acetate solution has a conductivity 50 times that of acetic acid.

$\text{NH}_4\text{Cl}$  = 100 times that of  $\text{NH}_4\text{OH}$ .

$\therefore$  these salts are highly dissociated.

- II. Feebly ionised compounds = 10 per cent. or under.

*E.g.* Weak acids, *e.g.*, acetic; benzoic; fatty,  $\text{H}_2\text{S}$ ,  $\text{HCN}$ .

Weak bases, *e.g.*, ammonia.

- III Non-ionised compounds = non-electrolytes, *e.g.*, sugar; alcohol; urea; proteids.

To sum up what has been said—the gist of the ionisation hypothesis can be stated in a few sentences:—

1. Most inorganic substances, which are soluble in water, are dissociated into electrically-charged ions. The amount of dissociation augments with increasing dilution up to a certain point. Substances which are dissociated to a large extent in solution, so that their ions determine their chemical and physical characters, are termed electrolytes,

\* A "normal solution" is one which contains a gram-molecule dissolved in sufficient water to make one litre.

or, if we regard their particular ions, acids, bases, and salts.

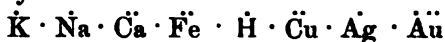
2. In no chemical reaction does a solution ever show the presence of free charges of electricity. Hence all solutions are electro-neutral—*i.e.*, contain equivalent quantities of + and — ionic charges. If ions are formed from neutral substances an equal number of + and — charges must be disposed of.

3. The presence of electrically-charged ions is the cause of the phenomenon of electrical conductivity in solutions of electrolytes.

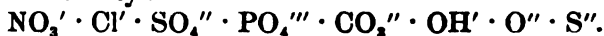
4. The ions of different substances possess different electro-affinities. Some hold their electrical charge more tenaciously—*i.e.*, are strong ions; others less tenaciously—*i.e.*, are weak ions.

Strong ions form, as a rule, soluble, strongly dissociated compounds, whilst the compounds of weak ions are generally only slightly dissociated or sparingly soluble, so that their solutions do not contain many ions.

(a) Kations arranged according to decreasing electro-affinity:



(b) Anions arranged according to decreasing electro-affinity:



(Abegg and Herz.)

5. Electrolytic dissociation, electrolytic conductivity, and capacity for chemical interaction, run on parallel lines. For these electrically-charged ions possess a much greater freedom of action than the atoms of the unseparated molecules, and upon this fact chemical reactions are largely based.

I pass on now to the consideration of some applications of the ionic hypothesis:—

#### I. Definitions.

An *acid* is a compound which yields H ions when dissolved in water, or in some other solvent capable of causing ionisation. All acid properties depend upon the presence and concentration of the H ions.

The degree of dissociation furnishes a measure of the

strength of the acid, and the degree of dissociation can be ascertained by determining the electric conductivity which is due principally to the H ions.

Two solutions of acids are said to be *isohydric* when they contain equal numbers of H ions.

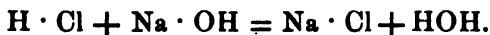
Similarly, a *base* is a compound which in solution furnishes OH ions. These hydroxyl ions are responsible for the alkaline taste, the action on indicators, and for the power of neutralising acids. That base is the stronger which produces the greater number of OH ions.

Ethyl alcohol contains the OH group; but as alcohol does not undergo dissociation in water there is no strongly basic or corrosive action manifested. All other substances which yield ions are termed "salts."

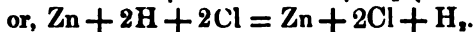
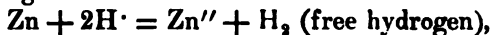
II. Neutralisation of acids and bases consists essentially in the union of H and OH ions to form water.



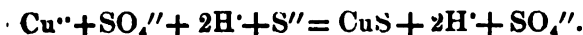
or, in full:



III. Solution of a metal in an aqueous and strongly dissociated acid consists essentially in transference of a + electric charge from H ions to the metal.



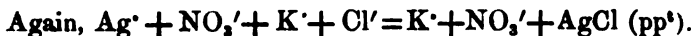
IV. Ordinary qualitative tests are really tests for ions, *e.g.*—



But  $\text{K}_2\text{Cu}(\text{CN})_4^{--}$  gives no black precipitate with  $\text{H}_2\text{S}$ , because the ions are  $2\text{K}^+$  and the complex negative ion  $\text{Cu}(\text{CN})_4^{--}$ .

Similarly  $\text{K}_4\text{Fe}(\text{CN})_6$  exhibits none of the ordinary reactions of CN or of ferrous salts, because its ions are  $4\text{K}^+$  and  $\text{Fe}(\text{CN})_6^{--}$ . And, as is well known, it is utilised as a reagent for  $\text{Fe}^{+++}$  ion.

It can be indubitably shown that its solution (1 in 100,000) contains 5 ions.



But silver nitrate yields no precipitate with the Cl in chloral, because chloral is not dissociated—i.e., contains no Cl ions.



An interesting example of ionic reaction, applied in measuring marine depths, is afforded by  $\text{Ag}_2\text{CrO}_4$ , which forms a red precipitate.

$\text{Ag}_2\text{CrO}_4$  is more soluble than  $\text{AgCl}$ , and hence is converted into the latter in solutions containing  $\text{Cl}'$  ions, the red colour changing to white. The inside of a tube closed at one end is coated with  $\text{Ag}_2\text{CrO}_4$ ; this tube is weighted and let down into the sea. The pressure of the sea water diminishes the volume of the air in the tube, and the  $\text{Cl}$  ions in the water which rises into the tube convert the  $\text{Ag}_2\text{CrO}_4$  into  $\text{AgCl}$ . The height to which the water rises at the greatest depth is indicated by the margin between the unaltered red  $\text{Ag}_2\text{CrO}_4$  and the white  $\text{AgCl}$ , and then, from Boyle's law, the pressure can be calculated. A pressure of one atmosphere corresponds roughly to a depth of 10 metres.—("Practical Chemistry," Abegg and Herz, 1901.)

V. What salts are present in a very dilute solution of, say, — $\text{KCl}$  and  $\text{NaNO}_3$ ?

Answer: Little or no salts; chiefly ions.

$\text{K}'$  and  $\text{Cl}'$ :  $\text{Na}'$  and  $\text{NO}_3'$ .

The poisonous action of many substances in solution is due, not to the action of the molecule as a whole, but to one of the ions, *e.g.*—

$\text{K}' + \text{CN}'$  (poisonous)

$\text{K}_4' + \text{Fe}(\text{CN})_6^{4-}$  (non-toxic).

VI. Action of colour *indicators* used in acidimetry and alkalimetry.

An indicator must itself be either feebly acid or basic in nature, and must have a different colour when non-dissociated from what it has in the ionised condition.

Thus phenol-phthalein is a feeble acid.

The free acid is scarcely ionised =  $\text{HX}$  (colourless).

Its salts are freely ionised  $= \overset{+}{\text{M}} \cdot \overset{-}{\text{X}}$  (ion is red).

But the alkaline-metal ions are colourless, therefore the red colour must belong to the acid radical. All the soluble salts of phenol-phthalein are thus coloured, and the colour is of the same intensity in equivalent solutions, when very dilute, so that we are justified in concluding in

terms of the dissociation hypothesis that the colour is due to the — ion of the phenol-phthalein, as this is the substance common to all dilute solutions of salts of phenol-phthalein.

It reacts to the weakest organic acids, and even to  $\text{CO}_2$ . A pretty way of demonstrating the presence of  $\text{CO}_2$  in expired air is to breathe through a tube into water reddened with alkaline phenol-phthalein. The red colour is speedily discharged.

*Methyl-orange* is a relatively strong acid.

The undissociated molecule  $\text{HX}$  is red.

Its ions  $\overset{+}{\text{H}} \cdot \bar{\text{X}}$  are yellow.

*Litmus* is intermediate in character.

The acid molecule is scarcely ionised =  $\text{HX}$  (red).

Its salts are ionised  $= \overset{+}{\text{M}} \cdot \bar{\text{X}}$  (blue).

VII. *Purity of Water*.—Ordinary tap water has a very considerable electric conductivity—i.e., it must contain ions in moderate quantity.

The purer the water the less its conductivity becomes. It is extremely difficult to procure and to keep chemically pure water, and it is then almost a non-conductor of electricity.

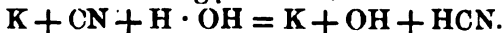
The specific conductivity of absolutely pure water is calculated by Kohlrausch and Heydweiller as  $0.038 \cdot 10^{-10}$ .

The purest water prepared by them = 0.0425.

This must mean that pure water contains very few ions by which the electricity travels. It is calculated that in  $12\frac{1}{2}$  million litres of pure water there are only 1 gm. H ions and 17 grms. OH ions—i.e., 1 molecule of dissociated water. This corresponds to about 2 milligrams of H ions per ton.

These amounts, although excessively minute, are sufficient to confer on the water the properties of a weak acid on account of the H ions, and of a weak base on account of the OH ions.

Hence arise the phenomena of hydrolysis—e.g., a solution of  $\text{KCN}$  reacts strongly alkaline, and smells of  $\text{HCN}$ .



The purest natural water is that melted from *natural* ice. Its conductivity is 2.13.

From artificial ice = 137.

Ordinary distilled water = 49.2.

These numbers represent the relative number of ions present. Hence distilled water, which contains comparatively few ions, acts as a protoplasmic poison on living cells, in virtue of the osmotic differences between it and the cell contents. Fish soon die when placed in distilled water, aerated. From the same point of view we can understand the well-known unpleasantness of distilled water as a drink, and the inexpediency or harmfulness of washing out the stomach with plain water, which may induce swelling and loosening of the epithelial cells. What is called "physiological" or "normal saline solution," say, 0.75 per cent. NaCl, is merely an approximation to the average osmotic relations of the body fluids (*i.e.*, it is roughly isotonic with them—*i.e.*, of equal osmotic pressure).

Again, let us consider for a moment the familiar practice of giving fragments of ice to patients to suck, or frequent sips of ice-water. Does not every practical physician know that this, after a time, is often objected to by the patient, and may even induce vomiting? Just so, because the purer the water the more injurious it is to the tissues. And the harm is all the greater because the warning sense of taste is depressed or annulled by the extreme cold. Some clinical physicians recommend artificial ice, prepared from distilled water, as being purer than natural ice. But the exact reverse is the fact, and artificial ice is more tolerable than natural ice because its ice-water is less pure and approaches more nearly in properties to ordinary drinking water. The same considerations apply anent the drinking of snow or glacier water, and wise mountaineers, taught by experience, avoid the temptation. It is not the low temperature of the water that is its drawback, but its purity; nay, the coldness of the water prevents its injuriousness being appreciated.

One of the springs at Gastein has for centuries been known as "Giftbrunnen," and its water is not drunk. Yet

chemical search fails to detect any poison in it. Now its electric conductivity is represented by the figures 31·9, which means that it surpasses in purity ordinary distilled water; so that, contrary to popular anticipation, the toxic action of the water stands forth revealed in its extreme purity. Compare this with the waters of some other well-known springs:—

Giessener, Brunnenwasser l	-	344
Marienbad, Ambrosiusbrunnen	-	1142
Homburg, Louisenquelle	-	5646
„ Elisabethquelle	-	15493
and 1·46 per cent. NaCl solution		20038—(Köppe).

It is evident that considerations such as these are of great importance in the scientific study of balneology, and we see that a complete investigation of a mineral water demands that it should be attacked both from the chemical and the physical side.

It is only physico-chemical analysis—i.e., cryoscopy, electric conductivity, ordinary chemical analysis—which can tell us what is the ratio of the *neutral molecules* to the *ions*. An ordinary chemical analysis of a water which expresses the percentage of salts is worth little. It does not represent all the facts, for no account is taken of ions.

We see, also, that the term “water-action” is misleading, except where used for chemically pure water, and this is practically unattainable.

It is incorrect to say of any mineral spring that its physiological action is merely that of pure water, as is sometimes said of such indifferent waters as those of, say, Buxton.

The physiological action of water is materially modified by the presence of even small amounts of ions in solution. AgCl is usually regarded as wholly insoluble in water, but pure water shaken up with that salt acquires increased conductivity, showing that some ions of the AgCl must have gone into solution (Ramsay, p. 70).

VIII. *Some Physiological Problems.*—The new conceptions of physical chemistry have begun to invade both physiological and pharmacological thought, have stimu-

lated investigation, and have opened up new lines of explanation of phenomena. I can refer to but one or two points. The red blood discs possess properties which correspond to those of semi-permeable partitions, and the volume of the red discs is regulated by the laws of osmotic pressure. This can be experimentally shown by means of the hæmatocrite.

Blood and milk, although chemically so different, have the same osmotic pressure, and we conclude, therefore, that they contain in unit volume the same number of molecules.

With two fluids of equal osmotic pressure the one with lower electrical conductivity would contain the more neutral (i.e., non-conducting) molecules, and the one with greater conductivity the more ions. There are no Ca ions in fresh milk, for  $(\text{NH}_4)_2\text{C}_2\text{O}_4$  yields no precipitate of  $\text{CaC}_2\text{O}_4$ , yet milk contains 0.25 per cent. of Ca phosphate. Therefore the lime is in organic combination.

All cells of the body are permeable to water; some, however, only in one direction, and some cells are permeable to one ion in solution, and not to another. Why this should be so, or how, we cannot tell. For example, the red discs of human blood contain no NaCl.

Sulphates, phosphates, and tartrates pass with difficulty through the intestinal wall; hence strong solutions of them are hypertonic in reference to the blood, attract water, and remain sufficiently long in the intestine to irritate its walls, and so induce their well-known hydragogue cathartic effects. The stomach is permeable to water from blood to stomach, but not from stomach wall to blood (v. Mering).

The stomach wall is impermeable to free Cl ions, and upon this observation Köppe gives an intelligible and plausible explanation of the occurrence of free HCl in the gastric juice.

And on similar lines can be explained the development of free HI and free HBr following the gastric administration of alkaline iodides and bromides, respectively.

We may regard the whole organism as a cell-complex traversed by innumerable osmotic streams and counter-

streams, which reinforce or counteract each other in endless variation, and it is in virtue of this interchange that the cells of the body are able to preserve their integrity in the face of considerable changes in their environments.

In a recent communication by Mr. A. E. Barker (*Brit. Med. Journ.*, Mar. 29, 1902) upon the subcutaneous injection of a normal (0·6 per cent.) saline solution + 5 per cent. of glucose, he points out that a 5 per cent. solution of glucose freezes at the same point as the serum of the blood and as normal saline solution. It is, therefore, isotonic with these, and consequently ought to be "indifferent" to the tissues, and clinical experience confirms this conclusion, and it is harmless.

The importance and significance of the inorganic salts in biology are strongly emphasised by the ionic theory.

We have hitherto somewhat lazily taken for granted that, in reference to proteids, the inorganic salts are mere admixtures, and serve a purely physical purpose. Yet it is much more probable that they exist in some sort of combination with them, and profoundly affect their properties.

In their passage through the body inorganic salts undergo many transformations. If they do not, strictly speaking, supply energy, they act as mediators of energy, and perform a kind of work in virtue of differences in the partial pressure of their constituents (Köppe).

It is probable that all salts produce their specific action in the ion form, and not as molecules. The least toxic of the ions to the animal body are those of Na and Cl. It is very remarkable that neither of these ions is essential to plant life.<sup>a</sup> In our own bodies the physico-chemical properties of NaCl are of great interest and importance.

For example, since its molecular weight (58·37) is small, the osmotic pressure of its solution is greater than

<sup>a</sup> The following salt ions are absolutely necessary to plants—viz., K, Mg, PO<sub>4</sub>, CO<sub>2</sub>, Ca—to all but the lower fungi and algae. Mn forms an essential constituent of vegetable oxidising enzymes. NO<sub>3</sub> and SO<sub>4</sub> act as nutrients. Animals require Na, Cl, CO<sub>2</sub>, Ca, K, Mg, I, Fe, PO<sub>4</sub>, SO<sub>4</sub> (Sollmann, p. 553). In plants the inorganic salts occur mostly in organic combinations, whereas animal fluids have a high proportion of free ions (Köppe.)

that of any other food-salt, because, weight for weight, each gram contains a larger number of molecules. It dissociates very readily. Its ions are not specifically active, and may be regarded as indifferent to the cells of the body, and therefore it plays an active part in determining and facilitating the movement of fluids and the diffusion of salts in the organism.

Elements which stand very near chemically may have a totally dissimilar ion action. As already remarked, plants are able to dispense with Na, but K is absolutely necessary to them, and cannot be replaced by any other alkali metal.

When the two alkaline chlorides (K and Na), after absorption, reach the blood, they part company to a considerable extent, as is shown by the fact that K ions preponderate in many of the body cells, while the Na ions are present in greater concentration in the blood and lymph where their osmotic activities are of the highest importance.

In health the molecular concentration of the blood serum—i.e., the total number of molecules in a given volume—is nearly constant. This is shown by the cryoscopic test that the freezing point of the blood is regularly  $0.56^{\circ}\text{C}$ . below the freezing point of water.

The chlorine contents of the blood-serum varies little from 0.58 per cent. of NaCl, and it is chiefly on this high content of NaCl that the osmotic pressure of the blood depends. Since the osmotic pressure of the blood is maintained at a nearly constant level it shows us plainly that a remarkable and highly complex regulatory mechanism is at work, involving the control of various physiological processes (Herter).

The presence of ions in the blood and other fluids of the body explains the ability of the tissues to transmit electricity. And there can be little doubt that the partial conversion of caloric energy into electrical energy is a necessary incident of life, although we do not yet fully understand its bearings. Dr. Gamgee suggests the possibility that certain of the phenomena of absorption in the animal body might be closely connected with electro-

motive changes in the tissues concerned (Croonian Lecture, *Brit. Med. Jour.*, Mar. 22, 1902).

Perhaps one reason for the addition of so many grams (about 15) of NaCl daily to our food is this, that the organism needs and utilises it as a means for the production of electrical work.

#### CONCLUSION.

One word in conclusion. There are those who look upon the ionisation theory as absolutely false, and who will have none of it.

I think, however, there is a deepening conviction among chemists and physicists that, whatever may be its difficulties, and whatever form it may ultimately assume, it is an extremely useful working hypothesis.

It has co-ordinated whole series of facts which were before dissociated, or obscurely recognised; it has shed the light of reason upon many practices in analytical chemistry which were previously altogether empirical, and it explains many reactions which are otherwise but dimly or imperfectly understood.

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ART. XVII.—*On the Use of "X-rays" in Medical Diagnosis.*<sup>a</sup> By WILLIAM S. HAUGHTON, M.D.; Surgeon to Steevens' Hospital; University Demonstrator in Röntgen Photography; Member, Röntgen Society of London. (Illustrated.)

DURING the past six years the X-ray examination of a considerable number of patients (some 1,900 odd) in hospital and private practice has brought home to me the conviction that while Surgery and Dentistry have claimed an ever-increasing amount of help from the Rays, Medicine, at any rate in this country, has not availed itself as fully as it might have done of this additional mode of diagnosis.

The reason for this may be twofold—a natural diffidence to adopt a new method of examination, whose utility was unproved, or neglect on the part of advocates of the process to call attention to its utility in medicine.

<sup>a</sup> Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, March 7, 1902. [For discussion on this Paper, see page 448.]



The first of these difficulties is now removed by the records of splendid and sterling work from French, German, and American centres;<sup>a</sup> and with regard to the second, I may state that some three years ago I had the honour of calling attention to its possible value in the Pathological Section of the Academy, and in a Presidential Address before the Dublin University Biological Association.

It is my object briefly to call attention to those applications in medicine which have been proved successful, only detailing one or two illustrative cases amongst those which have come under my own notice.

In pulmonary tuberculosis I need hardly call attention to the great value of an early diagnosis, placing, as it does, the physician in a much better position to prescribe treatment, and greatly increasing the patient's chances of recovery.

In this disease, whose great prevalence and high mortality are universally recognised, "X-rays" have rendered splendid service, and will, I am confident, come into very general use when their true value is justly estimated.

*Two* constant physical signs are present in this affection when examined by the Röntgen method—namely, *opacity*, which depends on the *extent* and *density* of *consolidation* in the lung, and *restricted movement* of the diaphragm on the affected side, depending on the *loss of elasticity* in the lung tissue.

Before detailing cases let me describe my method of conducting this examination. I may say at the start that the fluorescent screen is infinitely preferable to any photographic method, for these reasons—the cardiac movements disturb the lung tissue for a considerable area around, and though very short exposures may avoid the faults due to respiratory movements, the disturbance due to the heart considerably lessens the value of the examina-

<sup>a</sup> Many of the observations mentioned in this Paper as the result of my own "X-ray" experience have been made independently by other "X-ray" workers, an excellent account of which will be found in the "Röntgen Rays in Medical Work," by David Walsh, 3rd edition; "Practical 'X-ray' Work," by Addyman; and "The Roentgen Rays in Medicine and Surgery," by Williams.

tion. On the other hand, the method by screen examination occupies a much shorter time—a few seconds in some cases—and possesses the further advantage that with the eye one can actually *watch* the movements of the heart and diaphragm, as their contour and position change, and record them on a suitable surface, from which accurate measurements can be made.

I find most “X-ray” workers of experience agree with me in this opinion; and when *very delicate differences* in shadow have to be estimated, as happens in very early cases of lung trouble, one can so graduate the “X-ray” light, while watching it on the screen, as to indicate a very slight opacity, which cannot be done in the photographic method.

To examine a chest, one merely places the patient with his back to the Röntgen lamp, which is placed at a fixed, known distance from the screen, and in a fixed relation to the anatomical structures in the thorax.

I find two feet from the lamp to the screen a convenient working distance, at the level of the ensiform cartilage, for observing the movements of heart and diaphragm.

It must here be pointed out that if the comparison between two different patients is to be of any use, the successive examinations must be conducted on what is known in experimental science as exactly similar conditions. Hence the necessity for adopting some such constant method as I have described.

If the patient is more comfortable sitting down the examination can be made so, but diaphragmatic movements are thus impeded; while if the recumbent position is essential for the safety of the case, a canvas stretcher permits the examination in the horizontal position. Having placed patient in one of these positions, a large screen is placed over chest, the light turned on, and observations are made of the position of the heart, and excursions of the diaphragm in quiet breathing. Then its level in forced inspiration and expiration is observed; and finally a close scrutiny is made of the relative transparency of the two lungs, and any isolated shadows due to patches of con-

solidation are searched for. During the course of this examination it is very necessary to vary the amount and quality of "X-ray" light, as I find slight differences of shadow may be overlooked in a light which is too strong.

To record the results of this examination I use one of two graphic methods. First, looking at shadow of heart and diaphragm on screen, with a dermatographic pencil I trace the outline of each on the patient's skin, first in full inspiration, then in full expiration. Next, the position of any shadow due to consolidation is marked on skin. From these marks on skin a tracing is made on tracing paper (some of which were exhibited), noting position of supra-sternal notch, ensiform cartilage, and nipples, or any special rib.

The other method of recording is to use a large sheet of celluloid, placed either on patient's skin or in front of screen, and on this celluloid the shadows are traced precisely as in the first method. One advantage of the celluloid method is that a case can be examined and recorded without the removal of clothes—a point that is sometimes much appreciated by the patient.

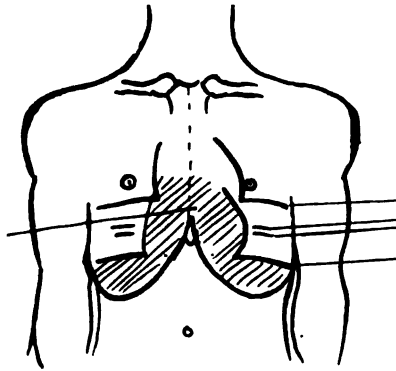


DIAGRAM 1.—NORMAL ATHLETE'S CHEST.

The highest line marks level of diaphragm—in forced expiration. The lowest line—in forced inspiration. The two intermediate lines—in quiet breathing. The central mass is shadow of heart in full expiration and inspiration. The excursion of diaphragm in this case in extreme movements was  $3\frac{1}{4}$  inches; in quiet breathing,  $\frac{1}{2}$  inch.

"X-ray" examinations have proved most valuable in the following varieties of *Pulmonary Tuberculosis* :—

1. In the diagnosis of very early disease, when there are *no* physical signs, or where they are very doubtful. For instance, in a patient suffering from anæmia, digestive troubles, and a slight temperature; but with *no* cough or expectoration.

2. In a case with very slight physical signs.

3. In one with complications, such as bronchitis, pleurisy, emphysema, or pneumonia, masking the tuberculosis.

4. To confirm diagnosis.

5. To test lungs (*a*) where a known tubercular focus exists elsewhere; (*b*) or in cases with a bad family history, to allay fears on part of patient or relatives.

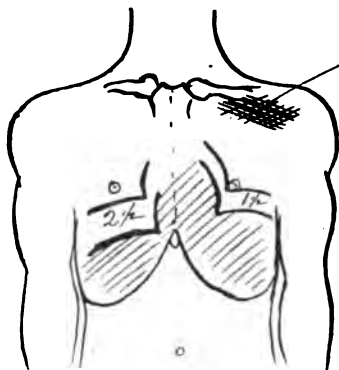


DIAGRAM 2.—PHTHISIS.

The apex of left lung throws a shadow (shaded area), due to "consolidation." Excursion of diaphragm (extremes of full inspiration and expiration) on diseased side was  $1\frac{1}{2}$  inches, as against  $2\frac{1}{2}$  inches on the normal side of chest. The only physical sign in this patient was hæmoptysis. A few days after "X-Ray" examination tubercle bacilli were found in sputum.

In a very early case of consumption the following signs are found present in an X-ray examination :—

1. Slight opacity of one apex, or of that part of lung where disease is commencing.

As I have pointed out elsewhere, to detect this slight opacity, due to consolidation, requires sometimes a very

considerable experience in X-ray screen examinations, and manipulative skill in adjusting the quality and quantity of X-ray light.

2. Restricted movement of diaphragm on the affected side, due to loss of elasticity in the lung tissue. This restriction of movement is most marked, as a rule, in the lower ranges.

3. In some cases, during deep inspiration, the heart is displaced towards affected side.

Later on in such a case, where the usual physical signs have become established, "X-rays" show an *increase* in the *opacity* and *size* of the shadow of the consolidated patch; and at same time the diaphragm's movements become more restricted on the affected side.

Very often in a case where one apex only is suspected, "X-rays" will demonstrate a patch of consolidation in the other apex.

We can easily see the important bearing of these observations on the treatment of a case of phthisis, especially when taken in conjunction with percussion and auscultation. The results of the usual methods of examination can be confirmed, and in some cases the presence of more extensive disease diagnosed.

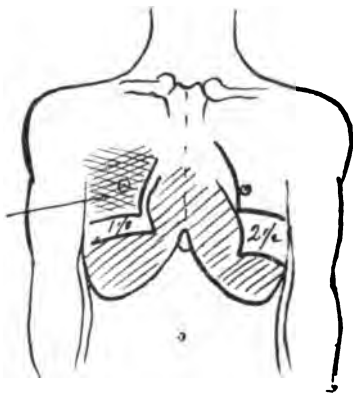


DIAGRAM 3.—ACUTE PNEUMONIA.

The right *lower lobe* is affected, and throws a shadow (shaded area), due to "consolidation." Note excursion of diaphragm restricted to  $1\frac{1}{2}$  inches on affected side, as against  $2\frac{1}{2}$  inches on sound side.

In the course of treatment the precise extent and progress of the disease may be watched by "X-ray" examinations repeated at regular intervals.

The process of resolution in a patch of consolidation is marked by a diminution in the opacity and size of its "X-ray" shadow. What has been said of the value of this examination in the treatment of a case is, of course, equally important in giving a prognosis.

When phthisis is complicated by bronchitis the former condition is recognised by the patches of opacity.

When pleurisy is present it can be distinguished by signs to be mentioned later on. This is true, also, of such complications as emphysema and pneumonia.

In the diagnosis of acute pneumonia little doubt exists as a rule; but where the disease commences in the central portion of a lobe, much doubt may exist for a time.

The Röntgen method in pneumonia yields following signs:—

1. Dense opacity of part or whole of lobe, according to degree of affection.
2. Restriction of diaphragm on affected side, or sides.
3. Displacement of heart away from affected side, accompanied by dilatation.

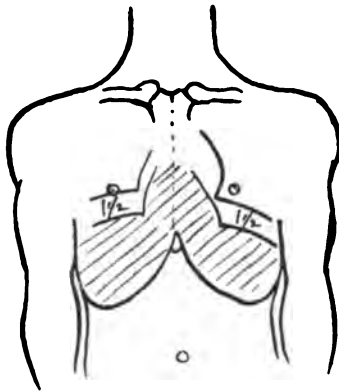


DIAGRAM 4.—LOBULAR PNEUMONIA.

Both sides of chest being affected equally, the excursions of diaphragm are equal,  $1\frac{1}{2}$  inches; but note that this  $1\frac{1}{2}$  inches is a "restricted" movement, as against the  $2\frac{1}{2}$  inches normal range in full expiration to full inspiration.

In the after-treatment of a case of pneumonia, and more especially in forming a *prognosis* as to risks of secondary affections of the lung, I believe "X-rays" will be of the greatest service.

For a considerable time after the crisis in pneumonia—some weeks—the affected lobe is found to be somewhat opaque, and the diaphragm's movements much impeded by the want of elasticity in the lung. If these signs (when other physical signs are absent) persist for a considerable time, as they sometimes do, the after-treatment of such a case would be necessarily more cautious and prolonged.

The complication of pleurisy in pneumonia also leaves behind it signs of restricted movement.

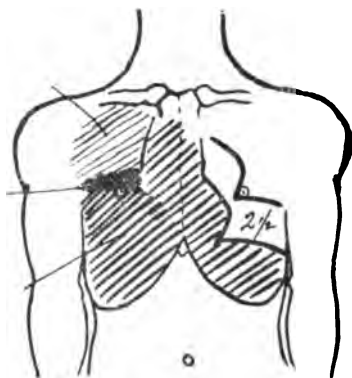


DIAGRAM 5.—PLEURISY.

Right-sided effusion—tapped—80 ounces. Note that upper surface of diaphragm on affected side cannot be distinctly seen, owing to adhesions and thickened pleura, &c. The *upper line* points to "compressed" lung—(shaded area). The *middle line* points to a narrow area, where "X-Ray" shadow was intermediate between that of lung and liver. Percussion over this area gave absolute dullness. The *lower line* points to liver shadow. The movement of diaphragm on affected side was practically nil—probably owing to adhesions.

In pleurisy, when an effusion is present, the screen shows following signs:—

1. Contour of diaphragm is partly or wholly obscured—the pleuritic fluid being very opaque, compared with lungs.

2. The lung in affected side is more opaque uniformly, due to compression by the effusion.

3. The heart shadow is also, of course, displaced away from the fluid.

When the fluid is free in the pleural cavity, changes in the patient's position will cause a corresponding change in the appearance on the screen; while in an encysted pleurisy the shadow is stationary.

"X-rays" also show much more displacement of the heart than can be elicited by percussion, in a certain number of cases.

Interlobar effusion can also be readily distinguished.

In emphysema of the lungs the screen shows a much brighter and more transparent condition, due to dilatation of air vesicles, and greater quantity of contained air.

This is, of course, present on both sides.

In pneumo-thorax, both with or without hydro-, pyo-, or hæmo-thorax, the pleural space filled with air is remarkably transparent, when contrasted with opposite side of chest.

Tumours of intra-thoracic origin, malignant growths in lung, pleura, or mediastinal glands, also bronchial tubercular glands, and some cases of œsophageal cancer, all yield distinctive "X-ray" signs.

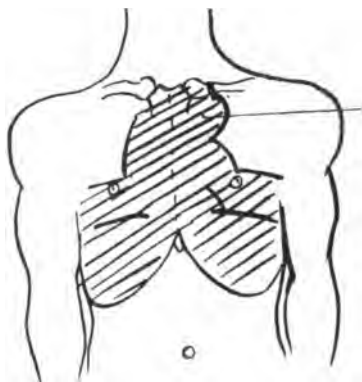


DIAGRAM 6.—ANEURYSM OF AORTIC ARCH.

Contrast this diagram 6 with the normal heart, No. 7. The line through left shoulder indicates the shadow of the aneurysm; which had undergone consolidation under treatment. Note also the shadow of the *broad, flabby, dilated* heart.



*Aneurysm of Aorta.*—This condition is very readily diagnosed by X-rays, and especially in early stages seems of larger area than percussion can indicate.

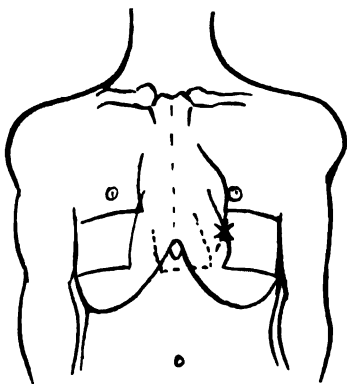


DIAGRAM 7.—NORMAL HEART.

This shows the contour shadow of the normal heart in *full expiration* and *full inspiration*. In the latter position the area of *cardiac dullness* as obtained by *percussion* is marked in dotted lines; and the impulse beat, both to sight and touch, is indicated by the "star."

*Normal Heart.*—Its size, shape, and character of pulsation (*i.e.*, its size and position in systole and diastole) can be watched and measured on the screen.

In many forms of cardiac disease most valuable information is obtained by observing changes in the size, shape, position, and pulsation of the heart. For instance, dilatation of an auricle can be distinguished from that of a ventricle.

It is superfluous to indicate the value of these observations during the treatment of cardiac disease.

In the abdomen we can now measure accurately the size, position, and shape of a distended stomach by giving a large dose of subnitrate of bismuth, and observing the shadow cast by the stomach fifteen or twenty minutes after.

I should also mention that dilatation of the œsophagus, due to stricture, can at certain levels be diagnosed by the same means.

In summing up the uses of "X-rays" in medical dia-

gnosis I would most vigorously insist that this graphic method for observing and recording the thoracic or abdominal organs by the eye should be used only as an aid to and in conjunction with the tactile and auditory senses of percussion and auscultation.

[Before and after the meeting Dr. Haughton demonstrated this method of screen examination with his apparatus on a number of patients suffering from phthisis (early and late), malignant tumour of œsophagus,\* and pleurisy, who were very kindly placed at his disposal for this purpose by Dr. Travers Smith and Dr. Percy Kirkpatrick.]

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#### THE WAR IN SOUTH AFRICA.

A BOOK has just been published, entitled *Mentioned in Despatches* (Army and Navy Gazette, 3 York-street, Covent Garden, W.C., 1s. 2d. post free), which gives the whole of the mentions, honours, and special promotions in the Navy and Army, in connection with the South African campaign, which have been gazetted up to May 6th, 1902. We extract from the volume a summary of the honours bestowed upon the medical branch. The nursing sisters and other ladies have had forty-eight Royal Red Crosses. The share of the Navy is very small, being only two D.S.O.s. To the Army, and we include those consulting and civil surgeons who volunteered for service, and also Colonials, there have been awarded five V.C.s, one K.C.B., twenty C.B.s, two K.C.M.G.s, forty-seven C.M.G.s, and thirty-seven D.S.O.s. Non-commissioned officers and men have thirty-eight Distinguished Conduct Medals, and a sergeant-major has been awarded a bar for the medal he already possessed. The volume contains nothing new—all the information has been given in the pages of the *London Gazette* during the last two and a half years—but everything is presented in a concise form convenient for reference, and we are sure it will be welcomed by all who have friends or relatives mentioned or promoted for their gallantry and devotion to duty.

\* Since this Paper was read this case (malignant tumour of œsophagus) has died, and I am informed by Dr. Travers Smith that the *post-mortem* examination confirmed the "X-ray" appearances in every way.

## PART II.

### REVIEWS AND BIBLIOGRAPHICAL NOTICES.

*Syphilis and other Venereal Diseases.* By H. DE MÉRIC, Member of the Royal College of Surgeons, England; Surgeon to the French Hospital, London, &c. London: Baillière, Tindall & Cox. 1901. 8vo. Pp. 132.

THE Author concludes his Preface to this book by saying: "My 'Notes on Venereal Diseases,' published in 1889, form the nucleus of the present work, but I have added considerably to the text and made many additions, notably the last two chapters, one on the prophylaxis of syphilis, the other on the Contagious Diseases Acts."

The first chapter is devoted to "General Consideration of Venereal Chancres." In this chapter the author applies the term venereal chancre, both to what are commonly called "soft sores," and to primary syphilitic "hard sores." In Dublin, we hold that the term chancre should be applied only to primary syphilitic lesions which occur at the seat of infection, and are the first manifestation of syphilitic infection, which, if not promptly treated with mercury, will certainly prove to be the forerunners of complete syphilis. All other venereal sores are classed as chancroids or soft sores; with this distinction, the term chancre ceases to be misleading to either the student or the practitioner.

De Méric objects to the term chancroid on the ground that medical books, and especially those on venereal diseases, are often perused by the general public, "to whom the word chancroid would invariably imply syphilis, or what is vulgarly spoken of as the pox." It is absurd that medical nomenclature should be trimmed to prevent non-medical Paul Prys from falling into error, which the author suggests might lead to their treating themselves or their friends unnecessarily with mercurial preparations; if they suffered from so doing it would serve them right. Although

it is not common, we cannot endorse the statement that syphilitic chancres are never seen on the same person in different stages of development. We have seen a considerable number of instances where a syphilitic chancre has duplicated itself by contact with an opposing surface, as, for example, upon the labia, under the foreskin, or upon the lips. This, however, occurs only during the so-called period of second incubation, previous to the development of complete syphilis. The author cites the case of a man whose penis was amputated for epithelioma, and who subsequently developed unmistakable secondary syphilis, as "proving to the hilt" that the excision or destruction of the primary chancre has no effect in preventing the development of constitutional syphilis. It is not often that a chancre is so situated that it is possible to excise it, even in its early stage, but we have seen several instances where it was done, and the excision followed by prompt judicious mercurial treatment, for only a few weeks, in which complete immunity from any subsequent development followed, leaving little doubt that the excision of the original focus of the disease was an important factor in aborting it.

The book contains 126 pages, divided into fifteen chapters, dealing with various forms of venereal diseases, their complications and treatment, it is furnished with a table of contents, and a perfect index, is well written, and although it contains nothing original, either in description or treatment, it is a little book which will be found very useful by anyone wishing to read a short, concise treatise on venereal diseases. The chapter on Prophylaxis of Syphilis is an interesting account of some of the abortive experiments by serum injections, syphilisation, &c., which have, from time to time, been made, only to be abandoned and condemned. The author advocates the renewal, in some modified form, of the Contagious Diseases Acts as the only means of checking the spread of the disease, and he advocates providing ample and comfortable hospital accommodation both for male and female patients suffering from syphilis.

We concur with him in saying that prostitution is the

*fons et origo* of all venereal diseases, and if they are to be checked at all, it must be by the segregation of all prostitutes in suitable hospitals as long as they are capable of communicating disease. The hospitals should be made attractive, and the patients treated with kindness and consideration when in them, but they should not be permitted to leave the hospital until free from active syphilis or other contagious venereal disease. We have in the Westmoreland Lock Hospital, in Dublin, an institution which goes a long way towards accomplishing the end in view, but as it is voluntary with the patients to remain in it or not, its objects are often frustrated by their insisting upon being prematurely discharged.

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*The Essentials of Histology: Descriptive and Practical.*

For the use of Students. By E. A. SCHÄFER, LL.D., F.R.S.; Professor of Physiology in the University of Edinburgh; formerly Jodrell Professor of Physiology in University College, London. Sixth Edition. London, New York, and Bombay: Longmans, Green and Co. 1902. 8vo. Pp. xii. + 416.

THE Bibliographical Note prefixed to this edition renders any criticism of the work superfluous. The first edition appeared in May, 1885, the second in January, 1887. The third edition, enlarged, was issued in May, 1892. Finally, at stated intervals of four years, the fourth (April, 1894), fifth (June, 1893), and sixth (May, 1902) editions have been published.

The work has a twofold object. It is intended to serve as an Elementary Text-book of Histology, and at the same time to supply the student with directions for the microscopical examination of the tissues. To fulfil the latter end the book is divided into forty-six lessons, each of which may be supposed to occupy from one to three hours.

The most notable addition to the text of the present edition is the description of the structure of the central nervous system, which has been brought thoroughly up to date. The disposition of the nerve cells in the grey matter of the spinal cord and the connection of the nerve-

roots with the spinal cord are illustrated by several drawings taken from S. Ramón y Cajal. But many of the new illustrations in this edition have been drawn expressly for the work by Mr. Richard Muir; others have been borrowed from Professor Wilson and Professor Szymonowicz by permission. In the description of Fig. 308 (page 256), representing two hepatic lobules, we observe a misprint. The letter *p* is described as indicating the *intra-lobular* branches of the portal vein. The word should be *interlobular*, as correctly given in the description of Fig. 310 on page 257. The book is, however, wonderfully free from printers' errors, and the manner of its publication is worthy of the famous firm of Messrs. Longmans, Green and Company.

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*The Climates and Baths of Great Britain, being the Report of a Committee of the Royal Medical and Chirurgical Society of London.* Vol. II.: The Climates of London and of the Central and Northern Portions of England, together with those of Wales and of Ireland. London: Macmillan & Co., Limited. 1902. Pp. xvi. + 628.

THE second volume of this work fully maintains the high standard set by the first.

It contains clear and well-coloured maps of England and Ireland, showing elevations, and one showing rainfall, and local maps and tables; forty-two pages are well devoted to an excellent Index.

The climate of London is fully treated, and numerous interesting points are mentioned; for instance, how the very extension of London automatically removes one of the factors of fog—that is, mist, which lessens as streets with impervious pavements take the place of fields; if the smoke trouble is ever removed London will, from the absence of damp soil, be freer from fog than the surrounding districts.

The Health Resorts are well grouped, and there is not much special pleading as to their individual merits, though several, whilst acknowledging to a few cases of scarlatina, claim that they are “chiefly imported.” The Lake District nobly acknowledges to—“of about the usual frequency.”

Of the scanty measure of 200 pages spared to Ireland all but 8 are written by Sir John William Moore, who, in the too brief space allotted to him, has given the most readable and practical description of Irish health resorts which has yet appeared. First come general considerations, the articles on the climate of Ireland in general, and of Dublin in particular, being especially interesting. Then the various health resorts are taken in convenient groups, and their physical characters, climatic peculiarities, and disease distribution are described, the interest being kept up by apt allusion to points of historical and archæological interest, which show that Ireland does not stand in need of such interests but of a Sir Walter Scott to add them to the storehouse of general information.

Lisdoonvarna has a chapter to itself from the pen of Dr. Norman Moore, all the other spas falling into the section on climate. This arrangement is unhappy, as it either unduly exalts Lisdoonvarna or unjustly depreciates the other spas.

However, the great fault is one shared in common by all works dealing with the health resorts of the British Isles: it is that the amount of space is too limited to enable the authors to do justice to their subjects. If the Committee under whose auspices this work is issued had had the courage of their convictions and devoted an entire volume to Ireland, the Irish author would have had fuller scope, and the volume would have been not only accurate and reliable, but full. As it is at present, whilst valuing what we get, we cannot help wishing for the fuller particulars the exigencies of space have compelled the author to withhold.

*A Treatise on Materia Medica and Therapeutics, including Pharmacy, Dispensing, Pharmacology, and Administration of Drugs.* By RAKHALDAS GHOSH, L.M.S. Cal. Univ. Vol. I. Pp. iii. + 169 + vi. Calcutta: Hilton & Co. 1901.

AMONGST the many works on *Materia Medica* and *Therapeutics* which have appeared in recent years this is one

of the best for ready reference, as its clearness, brevity, and excellence of arrangement are quite remarkable. No trouble has been spared in classification, tables, variety of type, &c., and the excellence of its English prevents its brevity risking confusion. Unlike most books printed in India it is singularly free from typographical errors. The author has also carefully avoided error, but the following statement (p. 79) seems an inversion—"For example, Tinct. Card. Co. produces a brilliant crimson colour with tap, and a reddish-brown with distilled water."

The present volume deals with Pharmacy and Dispensing, Administration of Drugs, and Pharmacology and Therapeutics.

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*Atlas and Principles of Bacteriology and Text Book of Special Bacteriological Diagnosis.* By PROF. DR. K. B. LEHMANN, Director of the Hygienic Institute in Würzburg, and R. O. NEUMANN, Dr. Phil. and Med., Assistant in the Hygienic Institute in Würzburg. Authorised translation from the second enlarged and revised German Edition. Edited by GEORGE H. WEAVER, M.D., Assistant Professor of Pathology, Rush Medical College, Chicago. Part I.—Atlas with 632 figures on 69 Lithographic Plates. Part II.—Text, pp. 494. Philadelphia and London: W. B. Saunders & Co. 1901.

THIS is one of Lehmann's now well-known Medical "Hand Atlases," and the original German edition has been for several years in the hands of bacteriologists. The beauty of its coloured plates and the minute completeness of the text are deserving of unstinted praise. The part dealing with general bacteriology is most instructive, albeit most repulsive reading. We say "instructive" because the information is full, complete, and up-to-date (*vide* the short account of the action of the Röntgen Rays on bacteria). We say "repulsive" because Dr. Weaver, or whoever did the translation, has succeeded in producing the vilest German-American jargon, which no one with any respect for the King's English can read without a shudder. Thus, on p. 42 we find: "Since the principal source of energy



is excluded from the anaerobic which is at the command of aerobic bacteria (oxidation of the absorbed nutrient material by means of free oxygen), they are assigned to nutrient materials which are readily utilized,—as, for example, grape-sugar,—which liberates energy (heat) by division into two smaller molecules (for example, alcohol and  $\text{CO}_2$  or acetic acid, or lactic acid).” In the foregoing we have carefully reproduced the incorrect punctuation, as well as the obscure diction of the translation. Another barbarism is “Literature by Babès,” in which “by” is used as the equivalent of the German “bei” which has a totally different meaning. The word “Pest” is invariably used instead of “Plague,” and many other instances of non-conformity with correct English usage might easily be adduced.

The leading feature of the book is the revision of the nomenclature. Lehmann and Neumann claim to have personally studied each organism, and, as the result of their observations, have no hesitation in declaring a vast number of forms generally recognised as distinct species to be unworthy of this designation, and to be merely varieties or races of others. The authors are emphatically “lumpers.” Whatever we may think of the advisableness of throwing together the *B. pyocyaneus* with *B. fluorescens liquefaciens*, there can be no doubt that the authors have, in their dichotomous key, hit upon an arrangement which admits of the determination of a given unknown microbe more readily than any other method we know of. Taken all round, this work is indispensable in the bacteriological laboratory, and, were we asked which of the two volumes we regard as the more valuable, we should unhesitatingly choose in favour of the Text.

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*The Life of Saint Luke.* By EDWARD CLAPTON, M.D.,  
F.R.C.P.; late Physician to St. Thomas's Hospital.  
London: J. & A. Churchill. 1902. 8vo. Pp. 80.

It is not a matter of surprise that the life of Saint Luke, “the beloved physician,” should possess an attraction for a medical writer with leisure and of a serious turn of mind.

Dr. Clapton has constructed an interesting biography out of slender materials, but in doing so he has drawn not a little upon his imagination. For example, he says that there is every probability that Luke, who was reputed to have been born at Antioch, the metropolis of Syria, about 15 B.C., had some Herodian name given him in his infancy. Herod the Great, not long before the birth of Luke, had taken the greatest interest in this important city. His popularity amongst the resident Greeks must, therefore, have been exceedingly great, and it is no wonder that, as the custom was, many parents would name their infants after members of Herod's family. "As regards Luke," says Dr. Clapton, "this is a matter of some importance, as will be seen before this treatise is finished." The sequel to this conjecture is found at page 73, where Luke is identified with "Antipas, my witness, my faithful one, who was killed among you, where Satan dwelleth" (R. V.)—that is, at Pergamum, the capital of Mysia, where was the world-renowned temple of Æsculapius, the god of Healing, the fabled son of Apollo, and often called "Pergameus deus." By the way, we notice a strange contradiction at page 74, where Antipas is stated in one sentence to be a contracted form of Antipater, and in another is explained correctly to mean "against all."

Again, Dr. Clapton sees in the name Beelzebub, which is correctly interpreted "god of flies," a prophetic foreshadowing alike of the part played by the mosquito in the production of malarious fevers and of the "swarms" or "mixed multitude of noxious living creatures" which we now call micro-organisms.

Even the variant Greek New Testament reading "Beelzebul," "the lord of dung or filth," is by the author explained as "the source of those pestiferous germs which arise from putrefying animal matter, and produce so many zymotic and parasitic diseases; perhaps, too, the original source of the micro-organisms of cholera, as well as of the tubercle bacilli, and the bacilli of leprosy." (Pages 21 and 22.) Pursuing the same line of thought, the author speaks of "daimonia," or "disease-producers," in the passage where the Pharisees designated Satan *ἄρχων τῶν*

δαμονίων, or "prince of the demons," in his character of Beelzebub, or "lord of flies." (Luke xi. 15.)

We have always regarded St. Luke as one of the finest characters in the New Testament—his profession, his literary talent (witness his most graphic description of the shipwreck of St. Paul at Melita), and his sublime and Christ-like self-abnegation—all appeal to our sympathy and evoke our warmest admiration. As physicians, we rejoice that so noble a character—second in its beauty only to that of the great Healer of mankind Himself—should adorn the pages of the New Testament. What did not the Apostle Paul owe to the frequent companionship and skilful ministrations of Luke, "the beloved physician!" How pathetic is the statement of Paul the aged in his last epistle (II. Timothy)—"Only Luke is with me"—Luke, the faithful friend, companion, and fellow-labourer, "whose praise is in the Churches" through all the centuries of the Christian era.

*The Royal University of Ireland Examination Papers, 1901.*

Dublin: Alex. Thom. 1902. 8vo. Pp. 690.

THIS volume of nearly 700 pages forms a supplement to the University Calendar for the year 1902. We notice that, as in recent years, the printing of the Examination Papers has been entrusted to Messrs. Ponsonby & Weldrick, of the University Press, Trinity College, Dublin. The volume is admirably brought out.

*Questions and Answers for Dental Students.* By FERDINAND

J. S. GORGAS, A.M., M.D., D.D.S. London: Rebman, Ltd. 1902.

THAT works of the kind under consideration must—however good—be with caution put before a student in any science, is, we think, to be borne in mind *ab initio*, for the temptation to utilise a manual of this class, to the exclusion of the true treatises upon the various subjects dealt with, in the form of questions and answers herein, on the part of those presenting themselves for examination,

must be patent to anyone thinking over the matter. With this reservation let it be said that the author has very carefully gone into his subjects, kept well up-to-date, put his answers clearly and intelligibly, and combined brevity in them to boot.

Over 500 pages are given up to the consideration—in answer with question form—of the various sciences, anatomy, physiology, chemistry, materia medica, histology, metallurgy, and dental practice—prosthetic, surgical, conservative, &c.

As a rapid aid to examiners, teachers, &c., we think the work would undoubtedly prove of use. The chapter upon operative dentistry especially commends itself to our mind.

A very handsome volume is the result of the publishers' efforts.

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*Some Thoughts on the Principles of Local Treatment in Diseases of the Upper Air Passages.* By SIR FELIX SEMON, M.D., F.R.C.P. London: Macmillan. 1902. Pp. 130.

THE bulk of the present volume is composed of two lectures delivered in last October at the Medical Graduates' College and Polyclinic, which were published in the *British Medical Journal*. As will doubtless be remembered by most, these lectures gave rise to a very lively, not to say heated, correspondence in that Journal, in which no less than sixteen different writers took part. Little else could be expected, as Sir Felix Semon boldly attacked some pet theories of several well-known writers. For any who have not already read these lectures one may confidently say that they will well repay the trouble of perusal, as, no matter what views may be held on the various points discussed, there can be no doubt that the author has presented his case with very great force and moderation, and has shown that he approaches his subject from a thoroughly scientific point of view. No minutiae are entered into, but the broad lines of the treatment of such affections as adenoids, tubercular laryngitis, nasal stenosis, &c., are well and ably argued, and the ideas of the

writer set forth, with the reasons on which he based them, clearly and succinctly, so that the reader, be he specialist or no, can at once appreciate the trend of the arguments. Every laryngologist should be grateful to the author for his boldness in tackling what must have been to him a very disagreeable subject.

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*A Text-Book of the Practice of Medicine.* By DR. HERMANN EICHORST, Professor of Special Pathology and Therapeutics and Director of the Medical Clinic in the University of Zurich. Authorised Translation from the German. Edited by A. A. ESHNER, M.D.; Physician to the Philadelphia Hospital, &c. With 84 Illustrations. London and Philadelphia: W. B. Saunders and Co. 1901. In Two Volumes. Pp. 628 and 590.

THIS translation of Professor Eichorst's well-known text-book may be found interesting and useful to practitioners, as the facts of medicine are presented to the reader in a manner somewhat different from that to which he has been accustomed in works by English-speaking authors. Different nations have each their own style, and it is often helpful to look at familiar matters from a new standpoint. The views of so distinguished a Professor as Dr. Eichorst deserve our careful attention.

While the work may on these grounds be useful for reference, we cannot consider it as a whole as being in any way superior to several text-books on Medicine by English or American authors.

The translation has been fairly done; such expressions as "the choledoch duct" and "small swallows of milk" are, however, rather novelties to us.

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*Eczema, with an Analysis of Eight Thousand Cases of the Disease.* By L. DUNCAN BULKLEY, A.M., M.D.; Physician to the New York Skin and Cancer Hospital. Third Edition. New York and London: The Knickerbocker Press. G. P. Putnam's Sons. 1901. 8vo. Pp. 368.

THE aim of the present volume is to give to the practitioner such a view of the subject of eczema as shall lead

to its ready recognition, and if the student has any clinical experience in skin diseases he should experience no difficulty in either if he has read this excellent and practical little manual. It is sufficiently full to meet the requirements of any practitioner, though a dermatologist might look for further information on the ætiology and contagiousness of this too common and very distressing skin disease. For practitioners who cannot find time to study encyclopædic works—which so often bewilder the reader with conflicting theories, the present volume will prove a pleasant and trustworthy guide, easy of consultation and very practical.

We cannot finish without expressing the pleasure the good paper and beautiful type of the Knickerbocker Press gives to the reader.

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*The Principles and Practice of Medicine : Designed for the Use of Practitioners and Students of Medicine.* By WILLIAM OSLER, M.D., F.R.S., F.R.C.P.; Professor of Medicine in the Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore, &c. Fourth Edition. London: Henry Kimpton. 1901. Pp. 1,182.

THE great success which this book has enjoyed has enabled Professor Osler to bring out four editions within the space of nine years, and these successive editions are no mere reprints of the first. The same thoroughness, the same resolve to make the book representative of the present state of medical science which characterised the first edition have equally characterised those succeeding. This fourth edition may be looked upon in many respects as being a new work. Taken all round, it forms, in our opinion, the best work of its size on Medicine in the English language.

When we compare this edition with its predecessors we find the changes so numerous that it is impossible to allude to more than a very small proportion of them. The first article in the book—that on Typhoid Fever—has been rewritten, and is a truly admirable account of that disease. Practically new articles appear on Acute Tuberculosis,

Diseases of the Pancreas, Splenic Anæmia, and a number of other conditions on which our knowledge has been increased of recent years. In the articles on Pneumonia, Diabetes, Gout, and other affections there are many new paragraphs. In spite of all this, so judiciously has the re-writing been done that the work is but little larger than the first edition.

From its clearness, its accuracy, and its careful and judicial spirit, we say that this is a work which may be studied with profit by all practitioners—a work whose advice may be advantageously followed.

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*Contributions to Practical Medicine.* By SIR JAMES SAWYER, Knt., M.D. Lond., F.R.C.P. Lond., F.R.S. Edin., F.S.A.; Senior Consulting Physician to the Queen's Hospital; formerly a Professor of Medicine, Professor of Materia Medica and Therapeutics, and Professor of Pathology in the Queen's College; Physician to the Birmingham and Midland Hospital for Sick Children; President of the Midland Medical Society; Vice-President of the New Sydenham Society; and President of the Clinical Board of the General and Queen's Hospitals, &c. Third Edition, revised and enlarged. Birmingham: Cornish Brothers. 1902. Pp. 209.

THIS small volume presents the important contrast to the vast majority of the text-books, handbooks, cram-books, &c., &c., that its contents are select samples of the ripe fruit of the experience of a wise, sound, conscientious and skilled physician. Accordingly every sentence which it contains is of value to the medical practitioner. His observations and advice on such subjects as the too familiar plagues of modern worried existence—insomnia and constipation—are beyond all praise. In treatment of the former the following suggestions are made:—"Daily bodily exercise in the open air, but always short of great fatigue, must be enjoined. What is called carriage exercise is better than no out-door change at all, but walking is a far better exercise, and cycling better still, and riding on horse-back the best of all. A worn and worrying man,

habitually wrapt up in an absorbing torture of self-consciousness, exaggerating his subjectivities, and sleeping badly, must come out of himself, and blot out his self-consciousness with the saving graces of objectivities when he mounts a cycle or a horse's back." We will make no more extracts; we will close by strongly recommending this little volume to the attention of all our medical brethren.

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*A Manual for Assistants' Examination, Apothecaries' Hall.*

By MABEL F. STANLEY, Qualified Dispenser, Apothecaries' Hall. London: Henry Renshaw. 1902.

RENSHAW'S "Manuals" have occupied for a good many years a deservedly prominent place in the education of the professional youth of these countries. The present specimen—one of the smaller species—is one which we can confidently recommend to the class of readers for whom it is intended. The authoress tells us in the preface that "the chief object of this little Manual is to give to students studying for the Assistants' Examination, Society of Apothecaries, a guide of moderate dimensions, yet containing in concise form what should prove a useful adjunct to the ordinary text-books on *Materia Medica*, Chemistry, and Pharmacy, and so assist students to pass that examination creditably." We are not particularly prone to recommend "examination manuals." But we must say that the neat and well-printed little volume before us is an exceptionally favourable specimen of its type. It contains a vast deal of pharmaceutical information in a moderate space; the matter is always judiciously selected and skilfully arranged, while the diction is pure, and the style transparently lucid. What more winning features can a students' text-book possess?

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*Baldness and Greyness: their Etiology, Pathology, and Treatment.* By TOM ROBINSON, M.D. Fourth Edition.

London: Henry Kimpton. 1902. Pp. 125.

THE fact that this readable and very practical—very special—monograph has already reached a fourth edition



is incontrovertible evidence that the author had judiciously felt the public pulse before he proceeded to furnish skilled instruction on the subjects of the preservation and decoration of his hirsute appendages. He has brought this edition well up to date by re-writing and expansion. He has now, of course, as he himself says, "more material to draw from and to reason from," and the fusion of the new material with the old has everywhere been dexterously carried out. The volume is now too well-known to the professional public to require detailed examination. Dr. Robinson has not departed in any notable instance from the principles and methods of treatment advocated in former issues of his monograph; and we will conclude this short notice by expressing the wish, as we confidently feel the hope, that this fourth edition will continue to maintain the popularity of its predecessors.

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*Les Fonctions Hépatiques.* Par MM. A. GILBERT, Professeur à la Faculté, et P. CARNOT, Docteur des Sciences; Membres de la Société de Biologie. Paris: C. Naud, Editeur. 1902.

THIS exquisitely neat and beautifully printed little volume of 287 pages makes us up-to-date on the complex labyrinth of physiological problems associated with the life-history of the fertile hepatic organ; which in modern times has proved as troublesome and perplexing to the scientific investigator as it has always been profitable to the enterprising, and not over-scrupulous, clinical physician. The structure, functions, and derangements of the liver are here described in concentrated language of crystalline transparency. An excellent sketch of the evolution and comparative anatomy of the organ is given in the opening pages—from the modified group of intestinal cells which represents the dawn of its development, as found in rotiferæ and some vermes; through the cæcal diverticulum of *Amphioxys lanceolatus*, and the *hepato-pancreas* of molluscs and fishes, to the *foie biliaire* of reptiles, and the final stage, or *foie sanguin* of mammalia. And the very complex functions of the organ, so far as they are

known to physiologists, are described with corresponding lucidity. The present state of opinion on the various unsettled questions of hepatic physiology and physics are also placed clearly before the reader. We can confidently recommend this work as an excellent summary of its subject.

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*An Introduction to Dermatology.* By NORMAN WALKER, M.D.; Fellow of the Royal College of Physicians of Edinburgh; Assistant Physician for Diseases of the Skin to the Royal Infirmary, Edinburgh. With 43 full-page Plates, and 47 Illustrations in the Text. Second Edition. Revised and enlarged. Bristol: John Wright and Co. London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1902. 8vo. Pp. 301.

THE comparatively early call for the re-issue of this textbook is the best proof that its original appearance in the arena of scientific literature supplied a distinct want. The author himself expresses the opinion that its success was mainly due to its simplicity, and the absence of unnecessary details. In the main, we are disposed to agree with this view. The new edition has received expansion in some directions, so as to bring its information up to date; but the prominent feature is the increase in number of illustrations, which, we need hardly say, form a very important and instructive feature in a manual of dermatology. The volume is brought out in the conspicuously prepossessing "form" which characterises the medical publications of the eminent Bristol firm of John Wright and Co., who are bidding fair to make their city a future name in the annals of professional literature.

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*St. Thomas's Hospital Reports.* New Series. Edited by DR. HECTOR MACKENZIE and MR. G. H. MAKINS. Vol. XVVIII. London: J. & A. Churchill. 1901.

ST. THOMAS'S HOSPITAL REPORTS deal with the work of 1899, and is, as in the past, one of the most valuable of our annuals. Each year the book contains some indication

more or less marked that tells of the prevailing train of thought, and this year is no exception, for we read on page 405:—"At the present time antiseptic dressings have been almost entirely displaced." A very pleasing article is that of Mr. H. R. Robinson on "St. Thomas's Hospital Surgeons and the Practice of their Art in the Past." It is a wonderful story of progress—of patient toil and searching for truth with which the author has enriched Medicine.

*Hare-Lip and Cleft Palate.* By R. W. MURRAY, F.R.C.S.; Surgeon David Lewis Northern Hospital, Liverpool; late Surgeon Liverpool Infirmary for Children. London: J. & A. Churchill. 1902. Pp. 29.

THIS little book simply embraces the author's own somewhat extensive practical experience of operative interference in these two interesting conditions, and as such deserves perusal. The only operative procedures described are those he has found best in his own practice. The vexed question as to the best time at which to operate for cleft palate receives short notice, and to this query Mr. Murray replies that "the operation should be performed about the end of the second year, before the child has learned to talk, and necessarily talk badly—a habit once acquired very difficult to overcome completely."

*The Treatment of Injuries by Friction and Movement.* By WHARTON P. HOOD, M.D. St. Andrews, M.R.C.S., L.S.A.; Hon. Surgeon to the Royal Academy of Music, Royal Masonic Institution for Boys, and Royal Masonic Institution for Girls; Surgeon to the London Guarantee and Accident Co.; late Surgeon Royal Buck. Militia; and House Physician King's College Hospital. London: Macmillan and Co. 1902. Pp. 182.

THE first chapter is mainly an apology for, and explanation of, the late Mr. Hutton's method of "bone-setting." The remainder of the book is simply an essay on the treatment of injuries in general, dislocations, sprains, and some

special fractures, by friction and active, not passive, movement. With much of what Mr. Hood says about this method of treating injuries we agree, but there are some very questionable statements made, such as—"At the age at which fractures of the neck of the femur occur union never takes place (we assume he means bony union); therefore it is useless to endeavour to obtain it." Most surgeons will be glad to know that Mr. Hood says the only treatment required for fractured patella is "rest in bed for a day or two, . . . after which plaster is applied to encircle the lower third of the thigh, and patient is got up and told to walk about." We very much doubt whether this will be generally endorsed. On the whole, the essay deserves perusal.

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*The Practical Nursing of Infants and Children.* By FRANK COLE MADDEN, M.B., B.S. Melb.; F.R.C.S.; Professor of Surgery, Egyptian Government Medical School, and Senior Surgeon, Kasr-el-Aini Hospital, Cairo; formerly Medical Superintendent of the Hospital for Sick Children, Great Ormond-street. London: Cassell and Co., Limited. 1901. 8vo. Pp. 287.

THIS is a very comprehensive guide to the care and nursing of children, and should find a place on every nurse's book-shelf. Much instruction is given applicable to invalids of all ages, and the *warnings* are not less valuable, and, if carefully studied, will tend to prevent ills of daily occurrence. We are carried through all the usual childish ailments, medical and surgical, and through many which we should hope are unusual. The latest modes of treatment are fully explained, with all that enters into a nurse's province in preparation for strictly antiseptic surgery, and the after-care of these important cases. Hygiene, feeding, both in sickness and in health, with all the appliances a nurse may be called upon to use, are entered into with the fullest detail, rendering the work a really valuable guide in the path indicated.

PART III.  
MEDICAL MISCELLANY.

*Reports, Transactions, and Scientific Intelligence.*

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—LOMBE ATTHILL, M.D., F.R.C.P.I.  
General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—SIR CHRISTOPHER J. NIXON, M.D., P.R.C.P.I.  
Sectional Secretary—R. TRAVERS SMITH, M.D.

*Friday, March 7, 1902.*

The PRESIDENT in the Chair.

*Pseudo-Elephantiasis.*

DR. WILLIAM J. THOMPSON introduced a case of this condition in a patient admitted to Jervis-street Hospital a few days ago complaining of acute pain in her left side. On examining the part the spleen was found to be enormously enlarged, extending downwards almost to the crest of the ilium, and inwards as far as the umbilicus. Further examination revealed an interesting condition of the left leg, which she had never before shown to anyone or spoken of it in any way. It might be classed as a case of pseudo-elephantiasis. The patient is sixty-two years of age; her family history is good, both her parents lived to advanced ages, neither of them had ever been abroad, and she was never out of this country. She has always been strong and healthy, and has been a domestic servant for forty years. About thirty years ago she first noticed a swelling in the upper and outer part of the leg, about the region of the great trochanter, which came on very slowly, gradually extended inwards (surrounding the leg) and downwards. This swelling at first was always moist

on the surface, so much so that it kept her underclothing damp, but, as far as the patient remembers, never stiffened the linen. In about seven years the whole leg down to the ankle was involved. At the time of her change of life, twenty-three years ago, she had some very severe attacks of uterine hæmorrhage, which necessitated her resting in bed, and she affirms while so resting the swelling in the upper part of the leg commenced to get smaller. She was never married, and never had any trouble at her menstrual periods. The leg has remained about the same size for the past fifteen years, except that the exudations have stopped and the surface has lately become very dark in colour and quite rough. There is great thickening and enlargement between the knee and ankle-joint. The measurement at the thickest point is 26 ins., at the same point on the right leg it measures only  $11\frac{1}{2}$  ins. Since her admission into hospital the swelling has become much softer and less resisting—probably due to the rest in bed. The foot and as far on the ankle as the shoe fitted is scarcely swollen, and the swelling above this hangs quite over the foot when the patient stands up. From the thigh to the knee the swelling is not nearly so marked; the thickest part measures 24 ins., and the measurement at the corresponding point on the opposite leg is 15 ins. Up to her admission she was at work as cook, and except for the feeling of heaviness, never had any pain. She is positive that at no time had she any attack of pain or burning feeling in the swelling, as is so often described in such cases. The average quantity of urine passed per diem is 42 ozs. It is acid in reaction, sp. gr. 1017, no trace of albumen, sugar, or chyle. She is pale, thin, and emaciated, and states that for the past year she has lost flesh rapidly. It is not usual to have the spleen enlarged in such cases, and it is an interesting point whether in her case the splenic trouble is a distinct and separate disease, or whether both belong to the same category. Elephantiasis is essentially a disease of tropical countries, and in cases found in these parts the *Filaria sanguinis hominis* is found in great numbers. Climate and locality, combined with bad living, are doubtless the predisposing causes. No race is exempt from it, but the white suffer less than the dark. It affects both sexes, more especially the male sex; it occurs at all ages, and it is found in all conditions of life, but is more usual in adult and middle life. It is doubtful if hereditary taint has any marked predisposing effect. It is a chronic disease, as, according to Richards, the average duration

from observations made on over 600 cases is eleven and a half years. Keen and White, in their "Surgical Text Book," describe a case which had been under observation for seventeen years, and during that time the patient had repeated attacks of lymphangitis, each of which produced an aggravation of the previous condition. Dr. Archer, of the Barbadoes Hospital, described a case in the *British Medical Journal* of 1900, occurring in a black, age 40, and of five years' duration. The circumference of the leg was 45 ins. Amputation was performed, and the patient made a good recovery.

PROFESSOR MCWEENEY remarked that, save for a moderate polymorpho-nuclear leucocytosis and an increase in large hyaline leucocytes of transitional type, the blood exhibited no abnormality. He had observed three cases of this kind. In one, lymphorrhœa was a prominent feature, and the patient, a young man, ultimately died of septic intoxication. The two others were middle-aged men, and were treated by amputation. In both cases he had satisfied himself by dissection that the cause of the lymphatic obstruction was chronic tuberculous lymphangitis. The histological features were interesting, and comprised immense thickening of the epidermis, especially of the *strata lucidum et corneum*, often thickening of the true skin with dilatation of the lymph spaces, and general cedema. All fibrous structures showed marked overgrowth. The lymphatics were accompanied by streaks of small old infiltration, in which multiencysted giant cells of tuberculous character were embedded. The skin was about ten or twelve times as thick as normal. In both of these cases he had convinced himself that the pseudo-elephantoid condition was of tuberculous origin, and had confirmed his view by discovering the bacilli in one of them.

SIR GEORGE DUFFEY stated that not long since he met with a similar case of pseudo-elephantiasis of both legs, in a patient who had formerly suffered from eczema; he ascribed it to chronic lymphangitis excited by eczema. The blood showed nothing abnormal; it was carefully examined for filariæ, but none was found.

MR. TOBIN some years ago met with a case of the disease. The importunity of the patient induced him to tie the femoral artery of the side affected, but the operation, which he performed contrary to his own opinion, did no good.

DR. WM. J. THOMPSON, in reply, said that there was no history of eczema.

*Cases Illustrating the aid of X-Rays in the Diagnosis of Intrathoracic Tumours.*

DR. J. MAGEE FINNY called attention to the difficulties which attend the diagnosis of an intrathoracic tumour by the ordinary methods of clinical tests, not only as to its actual presence, but also as to its nature, and he claimed for the X-rays a position as a most valuable aid in clearing up the doubts which must attend such cases as regards (a) the presence of a new growth or an aneurysm ; (b) the pulsatile or non-pulsatile nature of the tremor ; (c) the exact position and demensions of the tumour. Dr. Finny submitted skiagraphs which Dr. Ed. J. M. Watson had taken of three cases which occurred in 1901, and detailed the clinical records.

CASE I. was an example of sarcoma of the right lung which occurred in a woman, age 30, and whose illness commenced by hæmoptysis. When admitted, under Dr. Finny's care, into Sir Patrick Dun's Hospital in February, 1901, the right side of the thorax was apparently full of fluid, and was opaque to the X-rays, so that no information was at that time afforded. The suspicion that there was something more serious than pleural effusion was aroused by the fact that the right mamma and the subcutaneous tissue of the right side were thick and œdematous, and the veins varicose with a downward blood stream. After 72 ozs. of serum, clear and free from inflammatory or other morbid products, were withdrawn, Dr. Watson took the skiagram (exhibited), and it was then evident that a tumour existed in front of and to the right of the vertebral column, occupying more than three-fourths of the lung space below the level of the fourth rib, and extending to within a short distance above the diaphragm. Although the tapping gave relief to the dyspnœa and some of the other symptoms, the solid œdema, the varicosity of the veins, and the other evidences of intrathoracic pressure did not disappear, but rather increased, causing cyanosis and dysphagia, and the patient died at home four and a-half months subsequently in an attack of breathlessness. No post-mortem was possible. The disease was primary, and considering the age of the patient it was presumably sarcomatous, and had its origin in the connective tissue of the glands in the posterior mediastinum, where it grew peripherally, invading the lung and pleura.

CASES II. and III. were examples of aneurysm of the aorta occurring in adult males, age 42 and 54 respectively ; the first of the arch, the latter of the descending thoracic aorta. In Case II.



the aneurysm had probably existed for two or more years, the evidences of an aneurysm of the ascending and transverse portions of the arch were readily made out, but the X-rays showed that the whole arch was involved, and that the sac was much larger than physical examination could determine, and extended quite as much to the left as to the right of the middle line. The sac bulged forward behind the sterno-clavicular joint and above the sternum, pushing the trachea to the left side. Tracheal tugging was manifest, and the pulse was absent from the left brachial and radial arteries. In Case III., on the other hand, the patient had been quite free from all history of aneurysm till two months before being seen, and there were no physical signs of any sort, the only symptom being one of pain referable to the third intercostal space in the left mammary line and extending to the left shoulder. This pain was at times so severe as to necessitate cessation of all work, the patient having to sit down or stand still in the midst of his labour or while walking in the street, and yet the X-rays showed a very distinct shadow in the region of the aorta, above the heart, extending well to the left side, and, more than that, the tumour was seen by the screen to be distinctly pulsatile, enlarging with each systole of the heart. In both cases a modified Tufnell treatment was adopted, and iodide of potassium was administered for from five to seven weeks, and both patients left hospital greatly benefited as regards pain. Recent information is to hand that Case II. is still well, ten months after treatment, and has been quite free from any symptom (while in hospital he was on the point of death by asphyxia for three days, owing to the pressure of the aneurysm on the trachea and bronchus), and Case III. has been at work for over two months without intermission. Dr. Finny looked upon the improvement recorded as rather a coincidence than as the result of treatment, which was carried on imperfectly and for quite too short a space of time, and is but an example of the variability of the growth of an aneurysmal sac, and the temporary improvement which may follow a change of direction of the yielding wall. At the same time this very peculiarity, as was first pointed out by Stokes in his work on the "Diseases of Heart and Aorta," gives the keynote of diagnosis between an aneurysm and a malignant growth.

#### *The Use of X-Rays in Medical Diagnosis.*

DR. HAUGHTON read a paper on this subject. [It will be found at page 414.]

DR. KIRKPATRICK considered the paper just read by Dr. Haughton as one of exceedingly great value as a supplemental aid to the ordinary methods of diagnosis. But the X-rays do more than this, for they give information unobtainable by any other method. He was particularly struck with their value in pneumonia. Acute croupous pneumonia is said to get quite well, and the physician looks on the case as cured; but by the aid of the X-rays in one of his cases, Dr. Haughton had demonstrated to him that the lung had not recovered its elasticity, and acting on the information he secured the patient sick leave and rest until the X-rays demonstrated that the lung had returned to the normal. In a case of broncho-pneumonia, Dr. Haughton demonstrated to him that the diaphragmatic excursion was limited to less than normal on both sides. Its value in the incipient stage of phthisis was made clear in a case of his in which the patient had had a vomiting of blood. The loss of blood did not recur, and when examined no physical sign of disease was discernible; by the X-ray screen Dr. Haughton showed an opacity in the apex of the left lung and diminished excursions of the diaphragm of the affected side. Since then the patient has developed the ordinary physical signs of tuberculosis, and bacilli are found in her sputum.

DR. R. LANE JOYNT considered that they were greatly indebted to Dr. Haughton for his excellent paper and his demonstrations of the rise and fall of the diaphragm, the value of which information can hardly be over-estimated in dealing with thoracic diseases. He recommends all physicians to bear well in mind that all skiagraphs exaggerate the size of the part photographed, and this amount of exaggeration is dependent on the distance of the patient from the plate; thus a distance of four inches from the plate gives an enlargement of one-fourth.

DR. HAUGHTON desired to say that Dr. Watson's skiagraphs of the thorax as shown by Dr. Finny were the best he had seen. The thorax was difficult to photograph with the X-rays, and he thought it was due to Dr. Watson that the excellence of his skiagraph should be acknowledged. With Dr. Lane Joynt he recognises that all X-ray photographs exaggerate the size of the object, due to a disturbance of the visual angle. He, however, hopes to correct this error by triangulation.

## SECTION OF PATHOLOGY.

President—E. J. MCWEENEY, M.D.

Sectional Secretary—A. H. WHITE, F.R.C.S.I.

*Friday, March 21, 1902.*

PROFESSOR E. H. BENNETT in the chair.

*Genito-Urinary Tuberculosis.*

DR. T. PERCY KIRKPATRICK exhibited a specimen of genito-urinary tuberculosis. The left epididymis and as far as the external ring was hard, enlarged, but not painful. Rectal examination detected a nodular enlargement in the left seminal vesicle. The lungs and other organs were healthy; no tubercle bacilli could be found in the sputum. Examination by X-rays gave a negative result. As the symptoms pointed to the kidney the abdomen was opened; the left kidney was found enlarged and cystic, and the right normal. On the table the patient collapsed, the operation could not proceed, and in three days death resulted. The autopsy showed the left kidney to be a semi-solid caseous mass, with little or no renal structure left, and the lumen of its ureter was completely obstructed throughout by a similar substance. The only renal symptoms were pain in the back and on passing water. The urine was albuminous.

MR. H. G. CROLY's opinion was that X-rays are useful in detecting renal calculi, but they do not assist in the recognition of tubercle. He prefers the lumbar incision in all cases, it gives enough room to remove the largest kidney, and allows of a manual examination of the gland, and the free drainage of any pus that may be present. Of the many kidney operations he has been called on to perform, he never had occasion to adopt the abdominal route.

DR. L. SYMES would like to know if there was tuberculous deposit in any organs other than in those named.

PROFESSOR BENNETT thought we had still a good deal to learn about the X-rays. Of his own knowledge, the rays failed to detect fracture of the clavicle, ribs, sternum, and pelvis. But this was from no fault in the X-ray—the fault was in the observers; it was due to their want of knowledge.

DR. KIRKPATRICK, in reply, said the X-rays were used to examine for renal calculi, and showed no stone. In this they were confirmed by the autopsy. A careful examination of the organs other than those named found no tuberculous deposit.

*Myxo-Sarcoma of the Spinal Cord.*

DR. J. B. COLEMAN exhibited a tumour of the spinal cord, which he had diagnosticated and located during life. It grew from the inner spinal membranes at the level of the eleventh and twelfth dorsal segments of the cord on its right dorso-lateral aspect. It was about the size and shape of a sweet almond. A microscopic section showed it to be a myxo-sarcoma.

*Horse-shoe Kidney.*

DR. J. B. COLEMAN also exhibited a horse-shoe-shaped kidney, the bond of union being at the lower end of the organs.

*Fracture of Both Bones of Forearm.*

PROFESSOR BENNETT exhibited a specimen of a fracture of both bones of the forearm immediately above the epiphyses. The case was a unique one, nothing even resembling it being recorded. On December 8th, 1900, he met the individual who furnished this very unusual specimen. She was a most peculiar girl, about 15 years of age, plump and well-nourished. She was densely ignorant, and strongly objected to being educated, stating that "nothing or nobody could make her know anything." A lady who knew her sent her to a training school for servants in Dublin. Whilst in the school she fell down some steps of stairs and produced the fracture. The accident happened on December 8th, 1900, and Professor Bennett saw her that day. The deformity somewhat resembled that of a Colles's fracture, or an epiphyseal separation of the lower end of the radius. He reduced it as well as he could, but he did not do it to his satisfaction, and put it up in splints. She came the following day to his study and he found the splints all right, and she now told him that at the time of the accident she distinctly heard the bone break. After six weeks he took off the splints and found the bones united. Be it noted that this occurred in a plump, well-nourished, good-coloured country girl, who had not complained of any illness, and had no sign of physical weakness, except an unduly large abdomen, and, what he learned afterwards, a distaste, indeed a positive dislike to all food except dry bread, refusing to eat meat, butter, or even sweet cakes. The only occupation she could be got to fill was the folding of tablecloths into lengths for mangling. On February 10th, 1901, he was asked to examine the wrist, and to his surprise he found that the deformity had returned. He sent her to Sir

Patrick Dun's Hospital and had the wrist skiagraphed. A transverse fracture of both bones, just above the epiphyseal line, was plainly marked ; a cast (which was exhibited) was taken of the limb at the site of the deformity, and it had some considerable resemblance to Colles's fracture. The fracture was easily reduced, and the patient left hospital on May 5th, 1901. She returned to the school, where she continued to be engaged at light work. Up to this, no other trouble than the broken wrist had been complained of. She, however, still persisted in refusing meat and all other forms of food except dry bread. She was next seen on January 1st, 1902, when Professor Bennett was shocked to find her so much changed for the worse ; she was profoundly pallid, of a deeper pallor than that of chlorosis, the spleen was greatly enlarged, and there was a certain amount of ascites, and the deformity of the wrist had greatly increased. He asked Dr. Finny to take her under his charge. On February 8th she died. From the time she left Sir P. Dun's Hospital in May, 1901, the deformity of the wrist-joint had gradually, but steadily, increased. The autopsy revealed no rickety condition ; there was no trace of osteomalacia, nothing telling of bone-softening. All the characteristics of pernicious anæmia were present, and, as may be seen from the specimen (exhibited), the fracture is well marked, and the posterior inferior extremity of the radius ends in a convexity, which is well marked and extends to its inferior articular surface. A diligent search on the subject of fractures fails to find a similar case. The most recent books are as silent on the subject as the oldest. In scurvy, as they knew, fractures do not unite, and old ones come apart ; but this patient's deformity returned when she was apparently in good health.

DR. KNOTT thought that in the return of the deformity and the separation of the fragments, the case had some resemblance to that mentioned by Anson as having occurred during the severe outbreak of scurvy in his command during his memorable second voyage. He could not find any cause for the non-union other than malnutrition.

DR. KIRKPATRICK looked on the case as one of great rarity, though he thinks quite different from scurvy ; if due to anæmia it should be more common, nor can he ascribe it to malnutrition. In many cases bones are soft, but such a peculiarity as the re-opening of the point of union must, he thinks, be due to marked peculiarity.

DR. LANGFORD SYMES considers scurvy as much more common to-day than we imagine, especially among the children of the wealthy. One of his last cases, in good circumstances, that of a child, had hæmorrhages, swelling of the joints, limbs, and the peculiar distaste to all food other than dry bread.

MR. H. G. CROLY said that on first looking at the cast showing the deformity in this case he felt inclined to call it an epiphyseal separation of the wrist-joint. And again, it somewhat recalled Colles's fracture, from which, however, the deep sulcus on its anterior surface differentiates it. The six weeks' time Professor Bennett allowed for healing was ample. He must confess he never met with such a case. He would just remark that it has a medico-legal aspect. If a case is set properly and osseous union has taken place, and from some cause or other the fractured extremities are again made free, the surgeon who set the fracture might find himself called on to defend an action for malpractice.

PROFESSOR BENNETT, speaking on the frequency of scurvy, said that he might just remind them that in 1669 Sir Charles Hawkins stated that he lost 6,000 sailors from scurvy during his twenty years at sea. That anæmia was not the cause of the separation of the fragments is beyond question, for it occurred when the patient was not suffering from anæmia, during her stay in a school where the feeding is good. He puts forward no theory, and seeks information on this obscure and unique case.

#### *Colles's Fracture.*

DR. KNOTT exhibited a specimen of Colles's fracture. Commencing with the early monograph of Pouteau, he traced the different theories that had been put forward up to the present.

PROFESSOR BENNETT said it was an interesting fact that Mr. R. W. Smith, from the study of specimens of Colles's fracture, completely changed his views, consequently his published views were the exact opposite of those he held at the time of his death.

MR. CROLY said they were all much indebted to Dr. Knott for the elaborate paper he had just read, though when referring to the work done in Dublin on the subject he would have liked some mention of Mr. Robert Adams's work.

## SECTION OF OBSTETRICS.

President—W. J. SMYLY, M.D.

Sectional Secretary—T. HENRY WILSON, F.R.C.P.I.

*Friday, April 18, 1902.*

The PRESIDENT in the Chair.

*The late Dr. Thomas More Madden.*

DR. PUREFOY, Master of the Rotunda Hospital, proposed a vote of condolence and sympathy with the family of the late Dr. Thomas More Madden, a foundation Fellow of the Royal Academy of Medicine in Ireland, and for many years one of its most regular attendants. His contributions to the Obstetrical Section were numerous and valuable, and his pathological exhibits were among the most interesting. For some years past ill-health prevented his attendance at their meetings, a distinct loss to their discussions. In his death the Academy has lost one of its most accomplished and literary members, and an able and judicious obstetrician and gynæcologist.

DR. GEORGE FOY seconded the resolution, which was supported by the President, and passed in silence.

*Exhibits.*

DR. PUREFOY exhibited a large fibroid polypus uteri, and a uterus removed by pan-hysterectomy.

DR. E. H. TWEEDY exhibited a large myoma removed by abdominal hysterectomy.

DR. PUREFOY would like to know if it would have been possible to remove the tumour from the uterus?

DR. E. H. TWEEDY, in reply, stated that the tumour had no pedicle, but sat so low down in the tissues of the broad ligament as to make either myectomy or enucleation impossible.

*Report of the Rotunda Lying-in Hospital.*

DR. MACAN congratulated Dr. Purefoy on the satisfactory nature of the Report, comparatively far more in the putting together of it than in the facts. There were some few points in the Report which he thought called for observation. In Table III. he found that of 286 abortions it was thought necessary to curette 200. This is a very large proportion—two out of three cases. What were the indications that justified so many operations?

To-day the danger from drugging is almost *nil*, thanks to our antiseptic measures. Curetting is attended with danger in the puerperium ; he has seen the principal assistant in the Munich clinic perforate the uterus at the very beginning of the operation. The application of the forceps in the extern maternity has the low proportion of 1 in 57·2 cases. Personal considerations enter so largely into the greater or less proportion of cases in which they should be used that we cannot say much on the question. But he cannot understand why it was necessary to have such a high proportion as 1 in 24·5 of the forceps for cases in the house, where the patient was throughout under observation, and the forceps could, if necessary, be applied at any moment considered advisable. In his own practice he now seldom applies the forceps, and he thinks the less they are used the better. Table V., cases of contracted pelvis, records the case of A. M., with an antero-posterior measurement of 7·5, who, unaided, gave birth to a living child, 8½ lbs. in weight. This case is remarkable, for the measurement is below that which is considered necessary for the birth of a living child. Equally interesting is the case of M. H., whose child weighed 8½ lbs. In the treatment of accidental hæmorrhage he finds that the oxytotoxic properties of quinine are believed in ; as for himself, he never found evidences of the alkaloid possessing such properties, and he thinks that five grains of it would not have much effect. He would, however, like to hear from Dr. Purefoy how the drug was used by him. The phrase inconsiderable bleeding as applied to *post-partum hæmorrhage* seems strange ; he would not feel inclined to call an "inconsiderable" bleeding *post-partum hæmorrhage*. The frequency with which a red discharge is found to follow retroflexion of the uterus should be impressed on students. Too often it is thought that as the uterus is pressed down behind the pubes, there is a firm contraction, when the truth is that the uterus has become retroflexed and a red discharge follows. In the case of an anencephalic child exhibiting congenital luxation of both knee-joints, he regrets that Dr. Purefoy did not more fully describe the luxation, and he would like to get some particulars of the case. Mr. M'Clintock's case was characterised by the limbs flexing anteriorly at the knee-joint. The sub-division of forceps cases is not wholly satisfactory. In cases of episiotomy he prefers the lateral incision, as if it does not give all the space necessary one can incise the opposite side ; it gives better results than the mesial incision, and its after results



are better. *Icterus neonatorum* is much more common than is generally supposed; fully 80 per cent. of children suffer from it, and as a rule they get well without any treatment at all. Withal, students should be told to be careful in their prognosis, for one of his cases died of it. He looks on the bad cases as due to malformation, and if for that reason alone they should not be too sure that every case will turn out well. He thinks that there is little use in setting up a morbidity table for oneself if with such a table one cannot make a comparison with other institutions. The Report, however, showed extremely good results; in such cases a morbidity of 12 to 20 per cent. is considered a very good return. The case of Caesarean section is rather obscurely reported. "Large fibroid lifted out of pelvis; pedicle transfixed and tied." Was it the pedicle of the tumour or of the uterus? If of the latter, the operation performed was that of Porro. To him there is no evidence of any connection between the case of aphasia reported and the puerperal state. Lots of cases of aphasia occur, and they all get well; there is no necessary connection between the confinement and the recovery of the speech. If one can show a case in which during several consecutive pregnancies aphasia occurred and disappeared on the termination of labour in each case, it will be seen that some correlation exists, not otherwise. Of the case of pulmonary embolism we read: "Examination of the chest showed a patch of dulness at the base of the right lung, and the other signs of pneumonia." But we are not told when the examination was made—before she left the house or after her return.

DR. JELLETT thought as he read the Report that somebody had worked very hard at it for twenty-four hours in collecting a great mass of materials, and then had neglected to spend a couple of hours in putting them into shape. At the very beginning he finds that the mortality table was forgotten; while in the section on accidental hæmorrhage it is recorded that two mothers died, but there are no particulars given of them in the list of interesting cases. In the case of rupture of the uterus and vagina he considered that the accident was due to the plugging, the tampon being allowed to remain after the uterine contraction had commenced. He considered that the tampon should be removed when the uterus pains are well begun. Quite recently a student of the Rotunda told him that the plug was allowed to remain in position until expelled with the child. The measurements as given in the table "contracted pelvis" appear to show that they

get round pelves in the Rotunda, and he cannot help thinking that the measurements must be wrongly taken. Menstruation appears to him to be a misnomer for the red discharge that occurs in newly-born female children. It is an isolated hæmorrhage, not a menstrual flow. He congratulated Dr. Purefoy on a low mortality equal to any since the hospital was founded.

The PRESIDENT congratulated Dr. Purefoy on his excellent Report, and the very low mortality of three out of 1,600 cases. He does not approve of curetting after abortions—it is not good practice. But a good deal depends on the kind of curette used—sharp, semi-sharp, dull. In all abortion cases where curetting is called for, he uses the dull instrument. The uterus during the puerperium is abnormally soft, especially its mucous lining; if you curette it all thoroughly there is the risk of perforating the wall, and if you curette imperfectly you leave septic matter close to a raw surface, a nidus of infection. In no case should a sharp curette be used. He recommends postponing the operation for six weeks. At the end of that time, the risks attendant on the operation are considerably lessened, and you then can recognise the firm muscle tissue under the instrument as you use it. In reference to the use of the forceps we read that the indications for their use are (1) danger to the mother, (2) danger to the child. But how are you to tell? They sometimes have to be used to save the mother unnecessary pain. He cannot see that all the women on whom they were used in the house were in danger. He, however, thinks that we differ more in expression concerning them than in practice. The taking of the pelvic measurements is not always easy of performance. Skutsch's pelvimeter, which he prefers, is an awkward instrument and very inconvenient to use. He would like to learn from Dr. Purefoy something more of his case of transverse narrowing at the outlet, which is a condition of great interest. In cases of narrowing of the pelvis, he was formerly inclined to practise version, but latterly he allows the head to mould: he would like to hear what the present teaching is. Thirty-seven cases of accidental hæmorrhages seem an extraordinary number for one year; they formerly looked on concealed hæmorrhage as almost fatal; here it seems to signify little. He looks on the plug as dangerous if left in the vagina long after labour has commenced. But he cannot agree that in the reported case the plug occasioned the tear. The injury may have been due to one of three things: (1) plugging the vagina; (2) pressure of the head on the cervix;

(3) pulling up of the vagina. *Ophthalmia neonatorum* was one of the troubles he prided himself, while Master of the Rotunda, on keeping the house clear of, and yet in that Section on one occasion when some ophthalmic surgeons were present he heard that their hospital clinics were crowded with cases of the disease in children who came from the Rotunda Hospital.

DR. PUREFOY begged to thank the members of the Section for the reception they had given his Report, and particularly those who pointed out its defects. Dr. Macan had waxed eloquent on the unwisdom of curetting, but he did not agree with him at all. He had had a very large experience both in the Coombe and in the Rotunda, and he was of opinion that the sooner you curetted and removed all septic matter from the womb the better. Of the wisdom of this procedure he was quite satisfied. The dangers of the operation were known to all. As to the question—Should it be necessary to curette two out of every three cases? He would answer—Curetting is expedient, even if not necessary. He did not mention that he used a blunt curette, for he took it for granted that the members were too familiar with the fact that a sharp curette should not be used in a parturient womb. Forceps were used under the indications plainly pointed out; they acted on the nature of the case and the condition of the patient. The state of the patient, not the length of time, regulated their conduct. Pelvic measurements were carefully taken and accurately noted, but all who take such measurements must be conscious of the difficulties of such work. The transverse narrowing of the outlet was due to approximation of the tubera ischii; he regrets that the patient was allowed to leave before measurements were taken. The oxytoxic properties of quinine are known and advantage taken of them to stimulate uterine action. He finds five-grain doses of the alkaloid every four or six hours an excellent oxytoxic remedy. *Post-partum* hæmorrhage is a relative quantity; it may be severe or slight, and a small discharge is quite as much entitled to the designation *post-partum* as the most profuse. The lateral and bilateral incisions in episiotomy advocated by Dr. Macan are not at all equal to the mesial incision he practises and recommends; the single lateral incision does not give as much space, and the bilateral incurs the risk of gangrene. Dr. Macan takes exception to his morbidity tables. When he became Master in the Rotunda he found them as they had been drawn up by Dr. Smyly; he liked them and adopted them, and

he had heard nothing that would cause him to change his opinions. As for his case of aphasia and of its connection with the puerperal condition, he commends it to Dr. Macan's leisurely study; that he (Dr. Macan) should ask unequivocal proof is natural. He recently saw his patient, and he is happy to say she is quite well, speaking quite freely. The lungs of his embolic patient were not examined immediately on her readmission; the woman was in a state of collapse, but they were examined within forty hours of the time, and he might add that there was an early pyrexial stage in the case. Dr. Macan was not satisfied with the success of their prophylactic treatment of *ophthalmia neonatorum*, although they had only four cases out of more than 1,600 children. All he could say was that Dr. Macan is hard to please. They used from one to three drops of a 2 per cent. solution of nitrate of silver. Dr. Jellett stated that the table of mortality was forgotten, but there was no forgetfulness in the matter at all. Three patients died during the year, and on the sixth line of the Report they are recorded. Of the two cases he cannot find in the "interesting cases," one is told with the necessary fulness in Table III., and the other is included in the "interesting cases." He had already stated that pelvic measurements are very carefully taken. His teaching *re* the plug is that when strong pains begin it is to be removed; there are, however, multiparae, whose pains expel the plug before its protrusion has attracted attention. As for the objection to the term menstruation, it is futile; for all he (Dr. Purefoy) knows, the child may have menstruated at the next monthly period. The question of version or allowing the head to be moulded to the passage is decided in every case by its circumstances. If the head is in a favourable position and the patient in a good state of health, the case is allowed to proceed; otherwise version is performed.

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#### TOXIC ACTION OF ANTISEPTICS.

DR. WOLF (*Montreal Medical Journal*, March, 1902) gives the results of a number of experiments to determine the relative toxicity of different combinations of mercury. These results corroborate recent teaching—that the antiseptic action of such solutions varies according to the number of free ions of mercury they contain.

## CLINICAL RECORD.

*Dermatological Note—Lupus Erythematosus Nasi.* By H. S. PURDON, M.D., Belfast Hospital for the Skin.

A SHORT time ago I was consulted by a young lady, aged twenty-one, occupation a school teacher, for an eruption on her nose. At the time I saw her the cutaneous trouble had existed for some four months. No treatment had been used. She was in good health, well made, healthy; no history of phthisis in her family. The only other point I could find out was that she suffered a good deal from "nervousness," and was slightly hysterical.

The appearance of the skin affection on her nose was so remarkable that I think it worth recording. There were three small patches, the largest not quite the size of a threepenny bit, situated close to the nostril on the right side. The other patches near to the same. All the patches were of the dusky or reddish colour peculiar to lupus erythematosus. To the finger the affected surface felt rough. The edges of the patches were clearly defined. The peculiarity that I noted was that around the edge of each patch there existed a well-marked, distinct, elevated edge, visible to the eye and apparent to the touch, of a pale colour, the contrast being well marked between the edge and centre of patch. I had never noticed this before. The sebaceous follicles in the nose were all more or less "plugged up." On her second visit I had the advantage of a consultation with Dr. E. B. Purdon, who, having attended some of the dermatological clinics on the Continent and in London, agreed with me that the case was one of lupus erythematosus.

Under the use of a salicylic acid preparation, and painting with the solution of ethylate of sodium, the disease is improving, and the ringed elevated edge is rapidly disappearing.

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## CLINICAL SIGNIFICANCE OF LEUCOCYTOSIS.

DR. JOHN T. HEWETSON, writing on the clinical significance of leucocytosis (*Birmingham Medical Review*, April, 1902), sums up:—"The clinician who despises detailed and exhaustive physical examination, who trusts largely to that admirable faculty, 'clinical instinct,' must frequently find himself very far afield in diagnosis. I would unhesitatingly advise a more frequent use of the Thoma-Zeiss hæmocytometer in surgical practice, and I have sufficient confidence in the consistency of leucocytic reaction to say that it has few rivals in the faithfulness with which it reflects the progress of local suppuration."

## SANITARY AND METEOROLOGICAL NOTES.

Compiled by **SIR J. W. MOORE, B.A., M.D.**, Univ. Dubl. ;

**F.R.C.P.I. ; F.R. Met. Soc. ;**

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl. ;

### VITAL STATISTICS

*For four weeks ending Saturday, April 19, 1902.*

### IRELAND.

#### TWENTY-TWO TOWN DISTRICTS.

The average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ending April 19, 1902, in the Dublin registration area and the twenty-one principal provincial urban districts of Ireland was 21·3 per 1,000 of their aggregate population, which, for the purposes of these returns, is estimated at 1,092,322. The deaths registered in each of the four weeks ended Saturday, April 19, and during the whole of that period, in the several districts, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Mar. 29	April 5	April 12	April 19			Mar. 29	April 5	April 12	April 19	
22 Town Districts	23·7	26·6	24·2	21·3	23·9	Lisburn -	18·2	27·3	27·3	18·7	21·6
Armagh -	20·7	13·8	6·9	41·3	20·7	Londonderry	14·1	21·3	17·9	10·2	16·0
Ballymena	24·0	28·8	43·1	9·6	26·4	Lurgan -	22·1	31·0	13·3	17·7	21·0
Belfast -	22·0	23·0	24·4	21·7	22·8	Newry -	8·3	24·9	33·1	20·7	21·7
Clonmel -	20·4	5·1	15·3	25·5	16·6	Newtownards	17·2	40·1	28·6	17·2	25·8
Cork -	27·5	28·1	19·2	15·1	22·5	Portadown	10·4	41·5	46·7	20·8	29·8
Drogheda -	16·3	20·4	40·8	16·3	23·4	Queenstown	19·8	46·3	0·0	33·1	24·8
Dublin (Reg. Area)	27·5	26·8	26·7	23·0	21·0	Sligo -	28·8	24·0	14·4	9·6	19·2
Dundalk -	23·9	16·0	23·9	20·0	21·0	Tralee -	26·6	35·0	42·5	42·5	49·1
Galway -	27·2	46·6	7·8	31·1	28·2	Waterford	25·3	25·3	19·5	11·7	20·5
Kilkenny -	44·7	19·9	14·9	5·0	21·1	Wexford -	14·0	28·0	18·7	42·1	25·7
Limerick -	15·1	42·4	19·2	27·4	26·0						

The deaths (excluding those of persons admitted into public institutions from without the respective districts) from the principal zymotic diseases, registered in the 22 districts during the week ended Saturday, April 19, were equal to an annual rate of 1·2 per 1,000, the rates varying from 0·0 in sixteen of the districts to 6·9 in Armagh. Among the 149 deaths from all causes registered in Belfast are 2 from measles, 4 from whooping-cough, one from diphtheria, one from enteric fever, and 2 from diarrhoea.

#### DUBLIN REGISTRATION AREA.

The Dublin Registration Area now consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock, and Kingstown. The population of the Area, estimated to the middle of 1902, is 379,003, being made up of the following:—City, 293,394; Rathmines, 33,203; Pembroke, 26,025; Blackrock, 8,759; and Kingstown, 17,622.

In the Dublin Registration Area the births registered during the week ended Saturday, April 19, amounted to 226—131 boys and 95 girls; and the deaths to 167—90 males and 77 females.

#### DEATHS.

The registered deaths represent an annual rate of mortality of 23·9 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the area, the rate was 23·0 per 1,000. During the sixteen weeks ending with Saturday, April 19, the death-rate averaged 26·6, and was 4·8 below the mean rate for the corresponding portions of the ten years, 1892–1901.

The total deaths registered in the week ended Saturday, April 19, include 4 from diarrhoea, 2 each from measles, scarlatina, and influenza, and one each from whooping-cough and diphtheria; 4 deaths from tuberculous phthisis, 21 from “phthisis,” 4 from tuberculous meningitis, one from tuberculous peritonitis, 2 from “tabes mesenterica,” and 8 from other forms of tuberculous disease. There were 6 deaths from malignant disease (“cancer”), including 2 from carcinoma. There were 27 deaths from diseases of the heart and blood vessels, including 4 from “apoplexy” (“hemiplegia”).

Diseases of the respiratory system caused 33 deaths, including 18 from bronchitis, 6 from broncho-pneumonia, and 4 from “pneumonia.” The total is equal to a rate of 4·5 per 1,000 of

the estimated population, the average rate for the corresponding period of the past ten years being 6·2 per 1,000. Diseases of the nervous system caused 18 deaths, including 7 from "convulsions;" of the latter 2 were under one month in age, and 5 between the ages of one month and one year. There was one violent death, due to accidental drowning.

In 6 instances the cause of death was "uncertified," there having been no medical attendant during the last illness; these cases comprise the deaths of 5 infants under one year of age.

Fifty-seven of the persons whose deaths were registered during the week were under 5 years of age (39 being infants under one year, of whom 13 were under one month old), and 40 were aged 60 years and upwards, including 20 persons aged 70 and upwards, of whom 5 were octogenarians, and 2 (men) were stated to have been aged 90 and 97 years respectively.

The Registrar-General points out that the names of causes of death printed above within quotation marks should be avoided whenever possible in Medical Certificates of the Cause of Death.

#### STATE OF INFECTIOUS DISEASE IN DUBLIN.

##### (1.) CASES OF INFECTIOUS DISEASES NOTIFIED TO THE PUBLIC HEALTH COMMITTEE OF THE CORPORATION.

Sir Charles Cameron, C.B., Medical Superintendent Officer of Health for the City of Dublin, has furnished information regarding the number of cases of Infectious Diseases in the City of Dublin notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending	March 29, 1902	..	..	67 cases.
"	April 5, "	..	..	80 cases.
"	" 12, "	..	..	70 cases.
"	" 19, "	..	..	68 cases.

Of the 68 cases notified in the week ended April 19, 11 were erysipelas, 4 enteric fever, 12 scarlatina, 6 diphtheria, 27 measles, and 8 chicken-pox.

##### (2.) CASES OF INFECTIOUS DISEASES IN RATHMINES URBAN DISTRICT.

Mr. Fawcett, Executive Sanitary Officer for Rathmines Urban Council, has furnished information regarding the number of cases of infectious diseases in the Urban District of Rathmines notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—



Week ending	March 29, 1902	..	..	1 case.
„	April 5, „	..	..	1 case.
„	„ 12, „	..	..	3 cases.
„	„ 19, „	..	..	2 cases.

Of the 2 cases notified in the last week, both were scarlatina.

(3.) CASES OF INFECTIOUS DISEASE IN PEMBROKE URBAN DISTRICT.

Mr. Manly, Executive Sanitary Officer for Pembroke Urban Council, has furnished information regarding the number of cases of infectious disease in the Urban District of Pembroke notified under "The Infectious Diseases (Notification) Act, 1889," as follows :—

Week ending	March 29, 1902	..	..	29 cases.
„	April 5, „	..	..	10 cases.
„	„ 12, „	..	..	33 cases.
„	„ 19, „	..	..	22 cases.

Of the 22 cases notified in the last week, 16 were measles, 3 were whooping-cough, and 3 were scarlet fever.

(4.) CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

One case of small-pox was discharged from hospital, and one case was admitted and remained under treatment at the close of the week ended Saturday, April 19.

Seventeen cases of measles were admitted to hospital, 2 were discharged, and 33 cases remained under treatment at the close of the same week.

Nine cases of enteric fever were admitted to hospital, 11 cases were discharged, there was one death, and 27 cases remained under treatment at the close of the week.

Fifteen cases of scarlatina were admitted to hospital, 4 cases were discharged, there were 2 deaths, and 73 cases remained under treatment at the close of the week.

Eight cases of diphtheria were admitted to hospital, 3 cases were discharged, there was one death, and 24 cases remained under treatment at the close of the week.

In addition to the above-named diseases, 7 cases of pneumonia were admitted to hospital, 9 patients were discharged, there was one death, and 20 cases remained under treatment at the end of the week.

## STATE OF INFECTIOUS DISEASE IN THE CITY OF BELFAST.

Dr. Whitaker, Medical Superintendent Officer of Health, has furnished information regarding the number of cases of infectious diseases in the City of Belfast notified under "The Infectious Diseases (Notification) Act, 1889," as follows:—

Week ending March 29, 1902	..	..	42 cases.
„ April 5, „	..	..	39 cases.
„ „ 12, „	..	..	38 cases.
„ „ 19, „	..	..	37 cases.

Of the 37 cases notified in the week ended April 19, 15 were enteric fever, 5 erysipelas, 7 diphtheria, 4 continued fever, 3 scarlet fever, and 2 membranous croup.

## ENGLAND AND SCOTLAND.

The mortality for the week ended Saturday, April 19, in 76 large English towns, including London (in which the rate was 18·1), was equal to an average annual death-rate of 18·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·6 per 1,000, the rate for Glasgow being 25·7. and for Edinburgh 22·5.

## METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1902.*

Mean Height of Barometer, - - -	29·919 inches.
Maximal Height of Barometer (29th, at 9 a.m.),	30·340 „
Minimal Height of Barometer (22nd, at 9 a.m.),	29·112 „
Mean Dry-bulb Temperature, - - -	45·9°.
Mean Wet-bulb Temperature, - - -	42·7°.
Mean Dew-point Temperature, - - -	39·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·238 inch.
Mean Humidity, - - -	77·8 per cent.
Highest Temperature in Shade (on 24th), -	61·7°.
Lowest Temperature in Shade (on 10th), -	33·0°.
Lowest Temperature on Grass Radiation (10th),	29·9°.
Mean Amount of Cloud, - - -	45·2 per cent.
Rainfall (on 16 days), - - -	2·061 inches.
Greatest Daily Rainfall (on 4th), - - -	·597 inch.
General Directions of Wind, - - -	N.E., N.W.

*Remarks.*

April, 1902, was a distinctly cold month. The mean temperature, it is true, fell short of the average by only  $0.6^{\circ}$ , but this was due to a comparatively high day-temperature in consequence of the large percentage of bright sunshine. The fact remains that April was only  $0.4^{\circ}$  warmer than March—the seasonal advance of temperature being practically at a standstill. Winds from polar quarters predominated, and the amount of cloud was singularly small—only 45.2 per cent., at 9 p.m. only 37.0 per cent. The consequence was a large diurnal range of temperature, sharp nights alternating with bright, sunny, and tolerably warm days. The duration of bright sunshine was estimated at  $199\frac{1}{2}$  hours, compared with 205 hours in April, 1901. The daily average duration of sunshine was 6.7 hours. On the afternoon of Monday, the 28th, a splendid display of rainbow-coloured solar halos was seen in Dublin.

In Dublin the arithmetical mean temperature ( $47.1^{\circ}$ ) was  $0.6^{\circ}$  below the average ( $47.7^{\circ}$ ). The mean dry-bulb readings at 9 a.m. and 9 p.m. were  $45.9^{\circ}$ . In the thirty-seven years ending with 1901, April was coldest in 1879 (the cold year) (M. T. =  $44.5^{\circ}$ ), and warmest in 1893 (M. T. =  $51.4^{\circ}$ ).

The mean height of the barometer was 29.919 inches, or 0.069 inch above the average value for April—namely, 29.850 inches. The mercury rose to 30.340 inches at 9 a.m. of the 29th, having fallen to 29.112 inches at 9 a.m. of the 22nd. The observed range of atmospheric pressure was, therefore, 1.228 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was  $45.9^{\circ}$ , or only  $0.5^{\circ}$  above the value for March, 1902. Using the formula, *Mean Temp.* = *Min.* + (*Max.* — *Min.*  $\times .476$ ), the value is  $46.7^{\circ}$ , or  $0.7^{\circ}$  below the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive ( $47.4^{\circ}$ ). The arithmetical mean of the maximal and minimal readings was  $47.1^{\circ}$ , compared with a twenty-five years' (1865–1889, inclusive) average of  $47.7^{\circ}$ . On the 24th the thermometer in the screen rose to  $61.7^{\circ}$ —wind, S.S.W.; on the 10th the temperature fell to  $33.0^{\circ}$ —wind, N.E. The minimum on the grass was  $29.9^{\circ}$ , also on the 10th.

The rainfall was 2.061 inches, distributed over 16 days, but of this amount 1.068 inches, or 51.8 per cent., fell on the 4th and 21st. The average rainfall for April in the twenty-five years, 1865–1889,

inclusive, was 2·055 inches, and the average number of rainy days was 15·2. The rainfall and the rainy days, therefore, were about the average. In 1877 the rainfall in April was very large—4·707 inches on 21 days. On the other hand, in 1873, only ·498 inch was measured on 8 days. In 1901, only ·864 inch fell on 12 days.

Fog was observed on the 5th, 9th, 10th, 11th, and 25th. High winds were noted on 12 days, reaching the force of a gale on the 3rd and 22nd. Hail fell on the 3rd, 12th, and 13th; snow and sleet on the 3rd. The temperature rose above 60° in the screen on only one day (the 24th). It failed to reach 50° on 7 days. It never fell to 32° in the screen, but on 7 nights it fell to or below 32° on the grass. The mean lowest temperature on the grass was 36·8°, compared with 37·3° in 1901, 39·0° in 1900, 37·8° in 1899, 40·2° in 1898, 37·7° in 1897, 40·6° in 1896, 37·8° in 1895, 40·0° in 1894, 38·2° in 1893, 32·4° in 1892, 34·1° in 1891 and 1890, 34·4° in 1889, 34·6° in 1888, and 31·6° in 1887. Solar halos were seen on the 25th, 28th, and 29th—the display on the 28th being particularly fine.

The rainfall in Dublin during the four months ending April 30th amounted to 7·175 inches on 59 days, compared with 6·520 inches on 58 days in 1901, 8·002 inches on 79 days in 1900, 7·557 inches on 71 days in 1899, 7·236 inches on 64 days in 1898, 9·554 inches on 79 days in 1897, 5·781 inches on 63 days in 1896, 10·233 inches on 65 days in 1895, only 3·203 inches on 46 days in 1891, and a twenty-five years' average of 8·466 inches on 66·2 days.

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Dr. B. H. Steede, M.D., D.P.H., reports that at the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 3·017 inches on 13 days, compared with 1·830 inches on 17 days in 1901. The heaviest falls in 24 hours were ·702 inch on the 4th and 1·070 inches on the 21st. Since January 1, 1902, 9·023 inches of rain have been measured on 54 days. The maximal shade temperature was 56·2° on the 29th, the minimal reading was 31·2° on the 7th.

At Knockdolian, Greystones, Co. Wicklow, the rainfall amounted to 3·105 inches on 14 days, compared with 2·800 inches on 15 days in April, 1901. The heaviest falls in 24 hours were ·830 inch on the 4th, and 1·030 inches on the 21st. The total rainfall in 1902, up to April 30th, was 9·215 inches on 48 days, compared with 10·060 inches on 56 days in 1901, 13·191 inches on 70 days in 1900, 12·380 inches on 70 days in

1899, 8·890 inches on 56 days in 1898, 13·080 inches on 80 days in 1897, and 5·686 inches on 50 days in 1896.

At Cloneevin, Killiney, Co. Dublin, 2·61 inches of rain fell on 14 days. The maximal fall in 24 hours was ·88 inch on the 21st. Sleet and hail fell on the 3rd. The average rainfall in April of the seventeen years, 1885–1901, was 1·792 inches on 14·5 days. Since January 1, 1902, 8·08 inches of rain fell at this station on 59 days, compared with 7·62 inches on 59 days in 1901, 9·23 inches on 77 days in 1900, 9·02 inches on 65 days in 1899, 7·74 inches on 61 days in 1898, 10·36 inches on 83 days in 1897, 5·27 inches on 55 days in 1896, 11·28 inches on 66 days in 1895, 9·09 inches on 74 days in 1894, and 6·94 inches on 57 days in 1893.

Dr. Arthur S. Goff reports the rainfall at Lynton, Dundrum, Co. Dublin, as 2·63 inches on 16 days, compared with 1·19 inches on 12 days in April, 1901, the greatest daily rainfall being ·65 inch on the 21st. The mean shade temperature was 46·6° compared with 48·3° in 1901. The thermometric range was from 33° on the 10th, to 60° on the 24th.

Dr. J. Byrne Power, D. P. H., Medical Superintendent Medical Officer of Health for the Urban District of Kingstown, Co. Dublin, reports that the mean temperature for the month of April at that station was 46·9°, the extremes being—highest, 59°; lowest, 33·5°. At Bournemouth the mean was 45·9°—highest, 64°; lowest, 31°. The mean daily range at Kingstown was 11·6°, and at Bournemouth 12·3°. The mean temperature of the sea at Sandycove Bathing Place was 47·5°. The rainfall at Kingstown was 2·27 inches on 14 days, the amount at Bournemouth being the same. Easterly winds prevailed on 17 days during April at Bournemouth as well as at other stations on the south coast of England, but on only 15 days at Kingstown. The duration of bright sunshine at Kingstown was 195·5 hours, whereas it was 210·8 hours at the Ordnance Survey Office, Phoenix Park, 166·4 at Valentia, 201·5 at Parsonstown, 212·7 at Southport, and 176·2 at Eastbourne.

## PERISCOPE.

### SERO-THERAPY IN EPILEPSY.

DR. CARLO CENI, discussing sero-therapy in epilepsy (*Medical News*, New York, March 8th and 15th), concludes by saying :—  
“ The said researches demonstrate that in epileptic blood there are two active principles, which their different and opposite properties show to be of different nature and origin. One of these principles circulates in a free state, and is only endowed with toxic properties when injected into the organism of another epileptic. The toxic effects may be immediate and direct, and may follow even small doses. The activity of this toxic principle is different in different individuals. The phenomena it determines are transitory in character. The other active principles circulate in the blood of epileptics, but only in a latent state. It is endowed with properties which have a stimulating power on the metabolic cells which are concerned with the elaboration of the epileptogenous toxic agents. These stimulating properties appear only as remote consequences that take place as a result of repeated injections over a considerable period of time with the blood-serum of an epileptic into himself or into another epileptic. These stimulating principles can deeply modify nutrition and epileptic manifestations. Upon both they exert a slow progressive action, which may be restoring and therapeutic, or weakening and poisonous. Their diverse and opposite modes of action depend upon some peculiar organic condition of the individual injected, and are practically unexplained. The organic condition of the patient in whom they are elaborated has no apparent influence on the different and opposite activities they may present. In the cases in which stimulating principles have restoring therapeutic properties, there always result a remarkable increase in body-weight, and an improvement or total disappearance of disturbances of organic functions, or of social life, the disturbances of psychic functions and the epileptic manifestations of whatever nature get much better or disappear entirely. The stability of these positive results is in a direct relation with the degree of physiological reaction in the elements of nutrition. In the cases in which the said principles do not act favourably on metabolism, the serum injections are useless. If continued in the same manner as in the preceding cases, there result a diminution in weight

and a getting worse of every disturbance of the organic or social life, the psychic functions become more impaired, and the epileptic manifestations increase in number and intensity, sometimes to a marked degree."

#### ROYAL COLLEGE OF SURGEONS, EDINBURGH.

At a meeting of the College, held on Friday, May 16th, 1902, the following gentlemen, having passed the necessary examinations, were admitted Fellows of the College:—William John Barclay, M.B., Ch.B., Edinburgh; Frederick William Collinson, M.D., M.R.C.S. Eng., Preston; David Ewart, M.B., Ch.B., Edinburgh; William Ewart, M.B., Ch.B., Edinburgh; Charles Forsyth, M.B., Ch.B., Edinburgh; Henry Albert John Gidney, L.S.A., India; John Holroyde, L.S.A., M.R.C.S. Eng., Chatham; John Jeffrey, M.B., Ch.B. Edinburgh; Thomas Davy Luke, M.B., Ch.B., Edinburgh; Charles Henry Leet Palk, M.B., C.M., India; and Charles Henry James Watson, M.B., Ch.B., Edinburgh. At the same meeting the medal and set of books, forming the "Bathgate Memorial Prize," presented to the College by Colonel William Lorimer Bathgate in memory of his late father, William M'Phune Bathgate, Fellow of the College, was awarded to Miss Charlotte Rose Greenfield, 7 Heriot-row, Edinburgh, for the highest marks obtained in competitive Examination in *Materia Medica* and *Therapeutics*.

### NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

#### *New Tabloids.*

MESSRS. BURROUGHS, WELLCOME & COMPANY, Snow Hill Buildings, London, E.C., have brought under our notice specimens of the latest additions to their long list of "Tabloid" preparations as follow:—1. "*Tabloid*" *Apomorphine Compound*.—The formula of this is—Apomorphine hydrochloride, gr. 1/50 (0.0013 gm.); ammonium chloride, gr. 3 (0.194 gm.); extract of liquorice, gr. 1½ (0.097 gm.). As is well known, apomorphine, in small doses, frequently repeated, is used internally in the treatment of certain affections of the respiratory organs; and it is said to be of especial value in cases of chronic bronchitis, bronchorrhœa, and whooping-cough. A useful combination is presented in "*Tabloid*" *Apomorphine Compound*, in which product the action of the apomorphine is aided by the stimulant-

expectorant properties of ammonium chloride and by the demulcent qualities of extract of liquorice. One may be slowly dissolved in the mouth, or swallowed with a little water, every hour or every other hour, as the symptoms of the patient may indicate. "Tabloid" Apomorphine Compound is issued, not sugar-coated, but plain, in bottles of 25 and 100.

2. "*Tabloid*" *Ammonium Chloride and Liquorice*.—It has been long recognised that the unpleasant taste of ammonium chloride may be disguised by the addition of extract of liquorice. Each "Tabloid" product contains 3 grains of ammonium chloride and 2 grains of extract of liquorice, and presents an extremely convenient means of administering the combination. One may be allowed to dissolve slowly in the mouth as often as may be necessary. We have tried this preparation, and venture to suggest that it might be improved by reducing the quantity of ammonium chloride to  $2\frac{1}{2}$  grains and increasing the amount of extract of liquorice to  $2\frac{1}{2}$  grains. As Messrs. Burroughs & Wellcome remind us, the chloride has an unpleasant taste. It is intensely pungent and saline. In the "Tabloid" as at present composed, the quantity of liquorice is not sufficient to cloke the taste. "Tabloid" Ammonium Chloride and Liquorice is issued in bottles of 100.

3. "*Tabloid*" *Liquorice Compound Powder*.—It is a common occurrence for patients to refuse to take compound liquorice powder as ordinarily prescribed, on account of its unpleasant taste when mixed with water. The "Tabloid" product has been introduced with the view of providing a convenient means of administering this well-known laxative. Each product represents thirty grains (1·944 grammes) of the Compound Liquorice Powder of the British Pharmacopœia, and two to four may be swallowed, with water, for a dose. The Firm state that "Tabloid" Liquorice Compound is prepared with drugs of assured therapeutic activity in a condition to disintegrate promptly on reaching the stomach. It is issued in bottles containing 25 and 100.

4. "*Tabloid*" *Kino Compound Powder, B. P.*—Kino is well known to be an astringent of considerable service in the treatment of certain forms of diarrhœa and dysentery. "Tabloid" Kino Compound Powder, gr. 5 (0·324 gm.) will be found to retain in a marked degree all the properties of freshly-prepared compound kino powder, and to be the most convenient preparation to employ. Each product represents five grains of the official powder—the accuracy of the dose and the usage of the finest drugs being assured. "Tabloid" Kino Compound Powder B. P. is issued in bottles



of 100. It is to be remembered that this preparation contains 5 per cent. of opium.

*Soloid Sodium Hydroxide and Soloid Pyrogallie Acid.*

MESSRS. BURROUGHS, WELLCOME & COMPANY have also brought under our notice specimens of "Soloid" Sodium Hydroxide, gr. 2 (0.13 gm.), and of "Soloid" Pyrogallie Acid, gr.  $\frac{1}{2}$  (0.032 gm.). These products have recently been introduced with the view of providing a ready means of estimating the degree of oxygenation of a sewage effluent. It is generally admitted that a sewage effluent which is well charged with oxygen will almost certainly be satisfactory, whereas if the effluent contains little or no free oxygen it will be unsatisfactory. The examination by means of the above "Soloid" products is very simple, and may be conducted in the following manner:—Fill a wide-mouthed bottle, holding about four ounces, with the effluent as it runs from the beds, drop in one "Soloid" product of each reagent, and insert the stopper carefully and in such a way as not to include any bubble of air. Shake the bottle for about half a minute and note the effect produced. If the liquid remain colourless or only faintly coloured, the oxygenation is not satisfactory. If the liquid assume a rich red-brown colour, the oxygenation is satisfactory. "Soloid" Sodium Hydroxide, gr. 2, and "Soloid" Pyrogallie Acid, gr.  $\frac{1}{2}$ , are each issued in bottles containing 25.

*"Soloid" Microscopic Stains.*

THE increasing use of the microscope in modern clinical research demands a ready and reliable means of staining pathological specimens. "Soloid" Microscopic Stains enable microscopists to prepare fresh solutions of the necessary dyes in small quantities when required. The products are prepared with dyes of exceptional purity, they are of high accuracy, and their use obviates the disadvantages associated with stock solutions. "Soloid" Microscopic Stains are issued in packages of 6. The full list comprises—"Soloid" Bismarck brown, "Soloid" borax methylene blue, "Soloid" eosin, "Soloid" eosin methylene blue, "Soloid" (Louis Jenner), "Soloid" fuchsine, "Soloid" gentian violet, "Soloid" Gram's iodine sol., "Soloid" hæmatoxylin, "Soloid" hæmatoxylin (Delafield), "Soloid" methylene blue, "Soloid" methylene violet, "Soloid" thionine blue. Detailed instructions for use will be furnished with each package.

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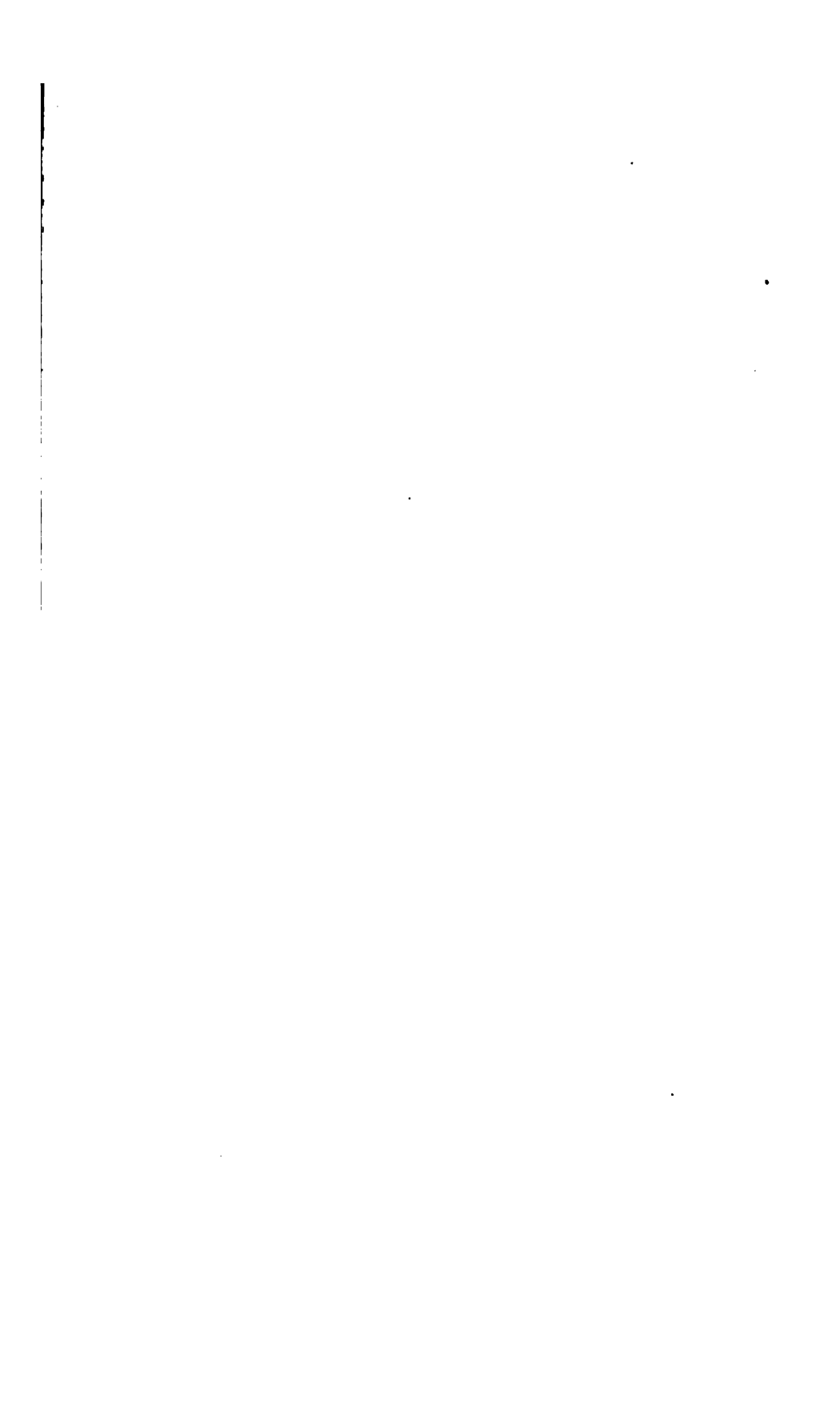
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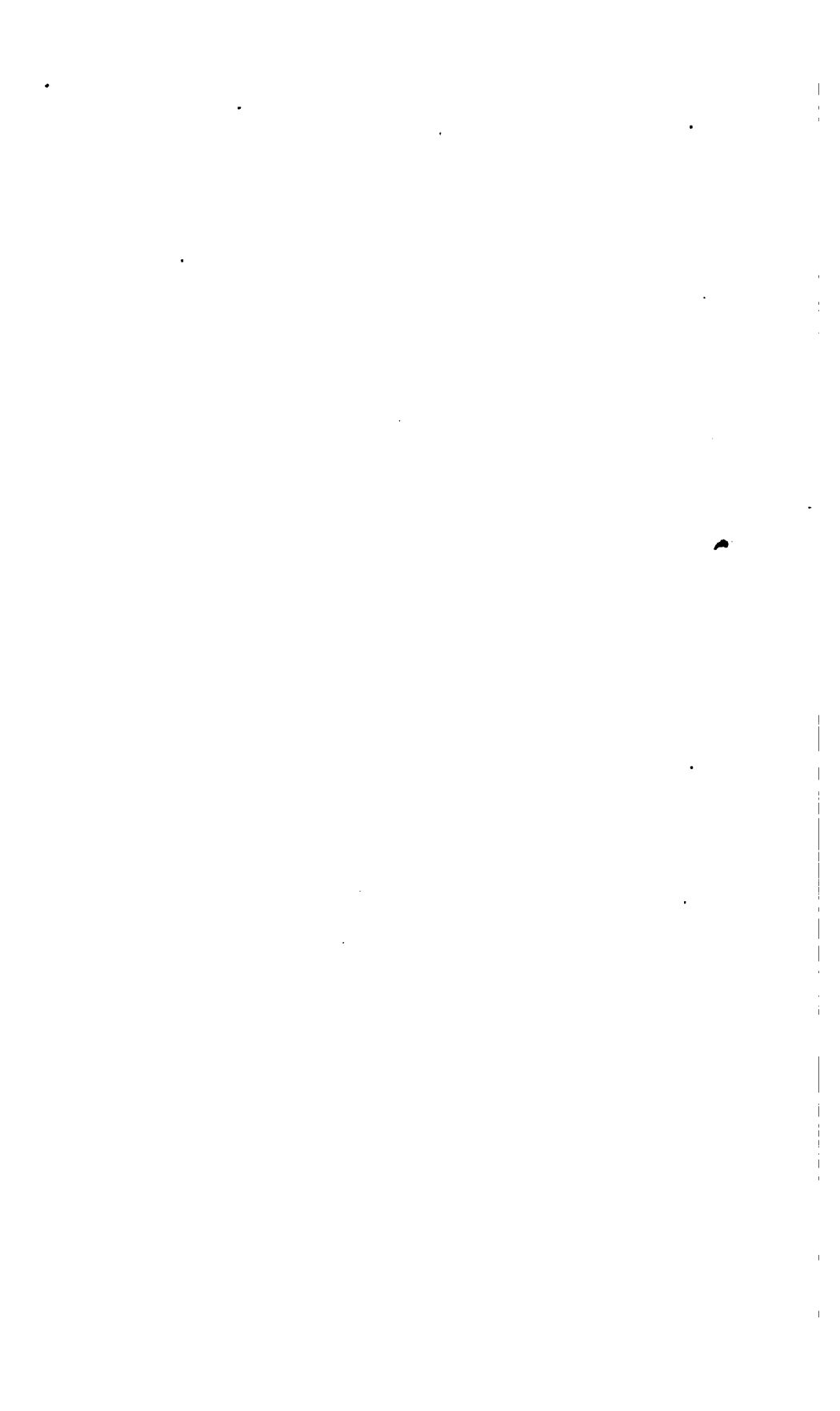
#### ERRATUM ON PAGE 396.

The date of Sir George F. Duffey's paper on "Rheumatic Orchitis as a Sequel to Fever." was 1872—not 1892, as printed.









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